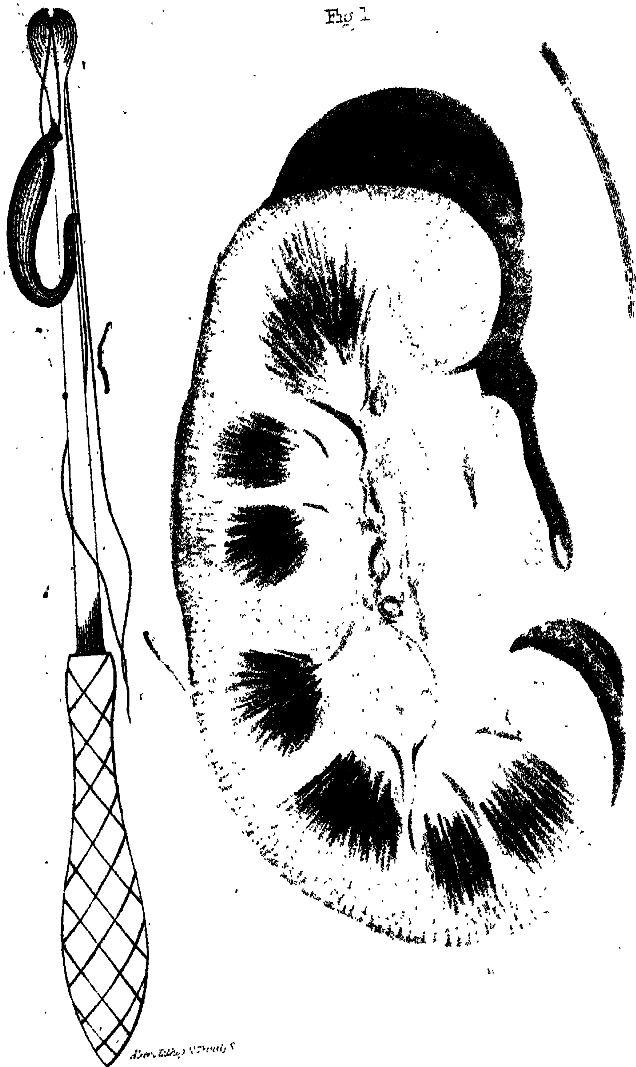


ON THE

NATURE AND TREATMENT

OF

DROPSICAL DISEASES:

IN FOUR PARTS.

PARTS I. & II

ON DROPSIES FROM SUPPRESSED PERSPIRATION AND DISEASED KIDNEY.

PART III

ON DROPSIES FROM IMPEDIMENTS TO THE CIRCULATION.

PART IV

ON DROPSIES FROM TOPICAL AFFECTIONS.

BY

JONATHAN OSBORNE, M.D.

[illegible] PRESIDENT OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND,

PHYSICIAN TO SIR PATRICK DUN'S AND MERCER'S HOSPITALS,

MEMBER OF THE ROYAL SOCIETY OF QUEBEC, OF THE BOTANICAL SOCIETY OF EDINBURGH, &c

---

SECOND EDITION,

WITH CONSIDERABLE ADDITIONS

LONDON

PRINTED FOR SHERWOOD, GILBERT, & PIPER,

PATERNOSTER ROW

1837.



INTRODUCTION.

In the present edition this little work is enlarged, in order to embrace all the forms of dropsy which are usually entrusted to the care of the medical practitioner. As the treatment of this disease has been hitherto very generally conducted in a routine manner by the employment of one set of remedies, and without reference to the various affections which produce it, I have in the following pages embodied a concise account of all those diseases which are accompanied or followed by dropsical swellings; and have pointed out the different modes of treatment, which, in my experience, have been proved to be most successful.

If in my diagnosis of diseases of the heart I shall be considered by some to be far behind the ad-

vances made in this part of the subject, on account of my attaching only a secondary importance to the sounds, and my relying mainly on circumstances connected with the obstructions in that organ for the discovery of the valve affected, my reply is, that those circumstances have been to me the surest guides, not only in distinguishing the valve affected, but in leading to some more remote but not less important practical deductions. Under the article Ascites, a distinction is drawn between those cases which are the result of simple inflammation of the peritoneal surfaces of the liver, and those which, depending on alterations of structure in its substance, are in their nature obstinate, and to be acted on only by repeated and carefully-conducted courses of treatment. The reader will find considerable stress laid on interposing intervals of rest, and total abstinence from the use of powerful medicines for the purpose of reinforcing the patient's vigour by appropriate means; the want of which has appeared to the Author to have caused many cases, otherwise well managed, to terminate unsuccessfully.

In the account of Renal Dropsy, published in the first edition, I have nothing to alter; and am gratified at perceiving that the opinions advocated in it are very generally admitted and adopted. My subsequent experience has confirmed their correctness. I have only to add, as accessory to the means recommended for procuring perspiration in refractory cases, a plan which did not occur to me till very lately, but which has succeeded after others had failed:—it is, the immersion of one of the extremities in the vapour bath for some hours every evening, and this for several days consecutively. When duly persevered in, I found that perspiration was at length induced in the one limb; and that, by continuous sympathy, it was soon afterwards spontaneously diffused over the entire surface with the effect of a complete subsidence of the dropsical swellings.

The number of cases from which the opinions set forth in this treatise have been derived is so great, that many volumes would be required for the publication of them; and in the present edition twenty-three are selected, merely for illustration of

certain symptoms or effects of treatment. These pages, therefore, are not to be taken as containing the author's experience, but the results of his experience in an abridged form; and, in publishing them, he endeavours to discharge a duty to the Public, which he contracted when he was placed over large hospital establishments: where as the opportunities for investigating disease have been supplied on the most extensive scale, so a corresponding value in the importance and accuracy of his observations ought reasonably to be expected.

DUBLIN, 26, HARCOURT STREET,
28th *April*, 1837.

THE

NATURE AND TREATMENT

OF

DROPSIES

ACCOMPANIED BY COAGULABLE URINE, AND SUPPRESSED PERSPIRATION.

PART I.

FROM THE DUBLIN JOURNAL OF MEDICAL AND CHEMICAL SCIENCE. JAN. 1834.

IT has been frequently observed, that dropsy should be considered rather as a symptom than a disease. Its occurrence in parts of the body previously sound, as a result of diseases of certain viscera, of debility, or of some impediment as to the functions of circulation or respiration, ought to have directed attention to the diseased actions believed to produce it, for information as to its nature and treatment. The classifications of dropsies hitherto adopted are about as rational and useful as would be a classification of diseases accompanied with excessive perspiration, under the

title *ephidroses.* Such classifications, embracing various affections, are injurious, by investing with a name a combination which is only a mental abstraction, and which has no actual existence. The connexion formed by including affections which happen to produce serous deposits, under the name *Dropsy*, has now begun to be dissolved. It is so well established that many of them arise from different and opposite states of the system, that in most cases inquiry is instituted as to the previous history of the disease; and few such affections are suffered to remain under the obscure denomination of dropsy, without some attempt being made to discover the *cause* of the serous effusion.

One kind of dropsy, however, has been suffered to remain longer under investigation than any other. It is not necessarily accompanied by any distinct local pain, and is not preceded by any disturbance of function, cognizable by ordinary observers, and it has been the work of many years to trace it to a diseased state of the kidneys. The first careful examination of the urine in dropsies was instituted by the late Dr. Wells. To him

succeeded Dr. Blackhall. Both these observers perceived that, in a great number of dropsies in which the urine coagulated by heat, there was evidence of inflammatory action, and that, in such cases, bleeding was productive of very marked benefit. Hence arose the class of dropsies designated inflammatory: and the practice with respect to these was much improved, and rendered more successful, by combining bleeding with diuretics; to which latter class of medicines the treatment had been hitherto exclusively confined. In addition to the cases adduced by Dr. Blackhall, we have those recorded by Dr. Crampton, in the Memoirs of the Association, which prove the benefit derived from bleeding in some cases, which, until this mode of depletion was practised, were progressively approaching a fatal termination. Here, however, the inquiry rested, till Dr. Bright made the important observation, that coagulable urine was connected with a diseased state of the kidneys. Since the publication of his work, Drs. Gregory and Christison have brought before the public large collections of cases and dissections, which all

bear testimony to the truth of Dr. Bright's observation. The cases of urine coagulating by heat, recorded by Drs. Christison and Gregory, were eighty-seven in number; and amongst those the granular deposit in the kidneys was always detected when examination after death took place. When these cases are added to the series of cases described by Dr. Bright, it must be confessed that they form a body of evidence to fix the pathology of an obscure disease, which merits the most serious consideration, in order to decide on the affirmative or negative of the proposition which they appear to establish. And yet, what has been their reception on the part of the Profession? A few statements were made, which, even if taken in their full extent, are inconclusive, and the truth of the discovery has been obscured by doubts and hesitations, rather than controverted by facts or arguments. The facts produced in opposition, so far as I have been able to collect them from the article *Dropsy* in the Encyclopædia of Practical Medicine, and from Dr. Copland's Dictionary, are the following:—

1st. That coagulable urine has occurred in adults who appeared to enjoy good health, and also in children.

2nd. That in some persons it can be produced by taking pastry, or other indigestible articles of diet.

3rd. That Dr. Darwall has adduced an instance of a woman who died from disease of the heart, and in whose lungs there were scattered tubercles, in whom the kidneys were found in Dr. Bright's first stage of disease, although the urine did not coagulate.

We shall consider these statements in their order:—

1st. The continuous secretion of coagulable urine by an individual, who, notwithstanding, remains in the undisturbed possession of health and strength, would prove, either that the secretion was not the result of disease, or that, if so produced, the disease must be unimportant, and inadequate to the production of any sensible disturbance of the functions. Whether such an instance as this can be produced or not, it is im-

possible for me to say; but I may be allowed to state, that in a considerable number of trials I have not found one example; and experience enables me to assert, that many instances may be found of coagulating urine, which appear to be cases of health, but which an attentive examination would prove to be connected with disease. I may adduce, as a specimen, the case of a young man, who, about a year ago, had palpitations, and œdematous swellings, for which his medical attendant prescribed bleeding and other remedies, with good effect, and then sent him to the country for the restoration of his health: he was lately brought to town, preparatory to the resumption of his ordinary avocations. He made no complaint, the palpitations and swellings no longer existed, and he believed that all his ailments were at an end: but the eye of his anxious mother perceived that there was still something wanting to perfect health, and he was submitted to my examination. His appearance was healthy, his appetite and sleep natural, and the only circumstance which affected him was an anxiety as to the motions of his heart,

in consequence of the opinion which his former attendant had entertained, of its being the seat of an organic disease. The heart's action, however, was natural: there remained then no complaint. I requested that a specimen of his urine should be brought, and, on observing its pale and cloudy appearance, tried it by heat, and found it to coagulate. Hence was opened a new field of inquiry; and it appeared that this young man, who, to a superficial view, would have appeared healthy, had a sensation of a dull weight in his loins, was in the constant habit of passing troubled urine, with dense mucous clouds, had dry skin, which never perspired except after the most fatiguing exercise, and altogether afforded complete evidence, that the kidneys were in the state which has been described by Dr. Bright.

It is true that in fevers, and other inflammatory diseases, an albuminous deposit is obtained on adding a saturated solution of corrosive sublimate. This urine is high coloured, and abounds in urea, yielding abundant crystals when treated with nitric acid, without requiring any pre-

vious evaporation. No coagulation, however, is effected by heat, unless it be so long continued at the boiling point, as to evaporate a large proportion of the water. There are also some individuals, who secrete constantly urine of this description, and in whom it may be traced to a habit of drinking very sparingly, by which a concentrated urine is produced. That a greater quantity of albumen in the urine is required to produce coagulation by heat, than by corrosive sublimate, is manifested by the following experiment:—I procured some urine secreted by an individual under these circumstances, which threw down an abundant coagulum to corrosive sublimate, but not to heat; and I found that an addition of a fortieth of its quantity of serum caused a cloudiness barely perceptible, a considerable time after it had commenced boiling, and that nearly twice that proportion was requisite to enable it to form a coagulum. Thus it appears, that such a proportion of albumen as may coagulate with corrosive sublimate, may be consistent with health, but that the quantity producing coagulation by heat is so

much greater, as to require a diseased state for its production.

The albuminous urine observed in children is very probably of frequent occurrence, which yet does not diminish the importance to be attached to it in the case of adults. The urine of children is at all times different from that of adults, in the proportion of its constituents. The quantity of urea and of uric acid is much less; and those are the deficiencies which are usually connected with albuminous urine in the adult. Hence we must not admit the value of albuminous urine as a symptom of a certain disease in the adult, to be diminished by the fact of the same being often secreted in infancy. The secretion is so different, that what is healthy in the adult would be esteemed morbid in the child, and consequently no comparison can be instituted between them.

2d. Here, however, we are met by the alleged fact, that certain healthy individuals are able, at any time, to produce a secretion of urine, coagulable by heat, merely by taking pastry, or certain other indigestible articles. Now this fact, if

worth any thing as an argument, amounts only to this:—'Coagulable urine is not an indication of the presence of a certain disease of the kidney, because it may be produced by eating indigestible substances.' In this proposition it is assumed, first, that the transient appearance of coagulable urine is the same thing as the continuous secretion of it, which alone constitutes the indication of the organic change of the kidney, of which we are treating; and, secondly, it assumes that this pathological phenomenon can only be produced in one way; and that, by showing that one way, it is proved impossible that it can be produced in any other. According to this mode of reasoning, we might prove that tenesmus is not an indication of dysentery, because it can be produced by aloetic purgatives; or that coma is not a symptom of apoplexy, because it can be produced by drinking spirituous liquors.

3d. Dr. Darwall's case of uncoagulating urine, in connexion with the first stage of diseased kidney, as described by Dr. Bright, carries no weight as an objection. The first stage of the disease is with

difficulty distinguished from the natural state, and is most likely to be confounded with, and appears almost identical with, that paleness of the kidneys, spleen, and liver, which occurs in scrofulous cases. And this was evidently a scrofulous case; as appears from the presence of tubercles in the patient's lungs, as stated by Dr. Darwall.

Those are all the adverse facts which I have been able to collect. But I find, with regret, that by some this important discovery has not been resisted by facts, but depreciated by loose observations, which deserve animadversion, when we consider the injurious effect which such may exercise on the progress of medical science, not so much with reference to this individual question, as to the investigation and settlement of medical questions in general. The truth of the statements made was not impugned; the extent of the field of observation—Guy's Hospital, and the Royal Infirmary of Edinburgh—has not been denied; the number of the observations recorded must have been admitted to be greater than has, within many years, been brought to bear distinctly on any one individual

proposition in medical science. And yet all these circumstances were dismissed with the trite remark, that *further observations are required;* a remark which is as applicable to the discovery of the Circulation, as to the question before us. By this remark we might throw an air of doubt over the best established propositions. It is so easily made, and, withal, so true when applied to every subject, that it is impossible to prove its impropriety. To this, however, has been joined the observation, that the writers, and the writers' friends, have not had opportunity to observe the connexion, and, therefore, they do not only disbelieve it themselves, but call upon others to do so, without producing a *scintilla* of evidence whereon to ground our disbelief, except the fact that *they* have not had, or have not availed themselves of, the opportunities of examining the question by the test of a sufficient number of experiments. This must forcibly remind us of the village lawyer, who, when his client had been convicted of stealing a sheep, by the positive testimony of three witnesses who saw him steal it, replied, that that evidence went for nothing, inasmuch as

he could produce many more credible witnesses who did not see him steal it. Thus, because those gentlemen have not seen the connexion between coagulable urine and diseased kidney, we are not to be permitted to credit the evidence of those who have seen it; and all the facts before us,—the result of long and laborious inquiries on this subject,—are to be dismissed with the unmeaning, because universally applicable aphorism, that *further observations are required!*

The number of cases of coagulable urine which came under my notice, and the details of which, for reasons stated in the Introduction, I have determined to omit, was thirty-six. Of this number examinations after death evince the disease of the kidneys in nine cases; while the remaining cases prove the existence of the same disease, so far as it is susceptible of proof, by similarity of symptoms, of cause, of collateral circumstances, and of *adjuvantia* and *lædentia;* and I can with truth aver, that I have witnessed many more cases which are not sufficiently detailed for the present occasion, but which, without any exception, corroborated the

truth of Dr. Bright's proposition. The negative evidence in my possession is too copious to be detailed. It is, however, decisive as to the question at issue. It consists of numerous cases of dropsies, connected with diseased liver, impediments of circulation, or respiration, or general debility, which terminated fatally, in which the urine was examined before death, and found not to coagulate, and the kidneys were found to be free from disease; also cases ending fatally, but unconnected with dropsy, in which the kidneys were healthy, and the urine did not coagulate. This evidence appears to me peculiarly valuable, inasmuch as during the last three years I have anxiously sought for every opportunity of examining the kidneys of every individual in whom the urine had been examined during life; and in no one instance have I met with coagulable urine without diseased kidneys, or healthy kidneys with coagulable urine. When I take this, my personal experience, in connexion with the great number of cases recorded by Drs. Bright, Christison, and Gregory, very few even of the most generally admitted facts in pathology appear to be grounded

on such a body of evidence. I have had under my care one case which may be esteemed an exception: in this the urine was rendered slightly turbid, and threw up a froth when heated to the boiling point. On dissection, the peculiar granulated structure was scarcely discernible; but one of the kidneys contained within its proper tunic, at its posterior surface, a mass of cancerous structure, presenting fungus hæmatodes, schirrus, and medullary sarcoma, altogether about the size of half an orange. This mass did not extend to the pelvis of the kidney, but was closely connected with both the cortical and tubular structure, from which it was difficult to separate it without causing a rupture of the adjacent parts. This occurred in a case of chronic bronchitis and emphysema, terminating in œdema of the lungs, and was unaccompanied by any complaint of pain or uneasiness in the part. In the other kidney there was an unusual hardness of the mamillated extremities of the tubuli, and an indistinctness in the striæ exhibited by them on a transverse section; the cortical structure of this kidney being very little altered from its usual

appearance. In this case the slight coagulation was probably produced by the cancerous disease now mentioned, which, being closely connected with the interior of the kidney, caused irritation, and consequently a morbid secretion.

Some other combinations of circumstances deserve to be noticed. In a case of acute nephritis, in which both kidneys were filled with abscesses, and in which the urine contained a purulent deposit, there was no coagulation by heat; hence (so far as one case can prove) it appears that coagulation does not belong to suppurative inflammation of the kidney. In another case one kidney was filled with abscesses, and the other contained the grey granulation. In this case the urine corresponded to the state of both kidneys, by presenting a purulent deposit, and also coagulating. In a third case the substance of one kidney was entirely absorbed, being almost reduced to a bag, formed by its investing membrane and pelvis, in consequence of tumors formed within its uretur, which prevented the passage of the urine into the bladder, and by pressure caused absorption of its

substance; whilst the other kidney was enlarged to double its natural size, and deformed in shape by a large deposition of the grey substance: and in this case the urine was light coloured, and coagulated.

It appears from the experiments of Dr. Christison, that the urine in those cases is of less specific gravity than healthy urine, and that the urea is always diminished; the quantity rarely exceeding one-half, and in some cases amounting only to a fifth of that in health, whilst he, at the same time, has proved its existence in the serum of the blood. This is confirmed by the observations of Prevost and Dumas, who found, in their experiments on animals, that when the kidneys were extirpated, urea appeared in the blood; thus proving that this substance is not *produced*, but merely *eliminated*, by these organs. When an injection is thrown into the artery, even in the most successful manner, it will not penetrate into the greyish deposit. The cortical portion of the kidney is the chief seat of the deposition; yet we sometimes find it filling up, and encroaching so much on the other part, that

the tubular portion is limited to small, insulated portions; and in these cases the tubuli increase in density, and become more confused together, the nearer they approach their termination in the mamillated processes. In some of the most acute cases I found the lining membrane of the pelvis and upper portions of the ureters in a state of the highest vascularity, resembling crimson velvet. The changes produced on the size of the organ are remarkable, and in my observations appear to follow this rule,—that, in the more recent cases, the kidneys are enlarged beyond the natural standard; while in long confirmed cases they are reduced in size, and become hard in proportion; the cortical structure appearing to be removed, and replaced by the grey deposit.

The examination of the urine in this disease must be conducted according to one fixed rule, otherwise we shall constantly meet with apparent contradictions. The urine should be that which is passed in the morning before breakfast. It should not be examined till it has cooled. It then is usually of a pale citrine colour, simi-transparent or trans-

lucent, but not transparent like healthy urine; and at the bottom of the vessel there is an opake, whitish cloud, consisting of the mucus of the urinary passages, and differing from healthy mucus by its greater density and opacity; while in other cases it differs from the healthy state by containing no mucous cloud. On heating this urine, in a spoon, over the flame of a candle, white coagula are formed in those portions of the fluid next the metal, long before the heat has advanced to the boiling point: and when the heat is continued afterwards, the coagula become more firm and distinct. The lesser degrees of coagulability are signified by its not taking place till the fluid has boiled, or till some of it has been evaporated; by no coagula forming, and the fluid being rendered merely turbid; and, lastly, by throwing up a froth when boiled, which appears to be produced by the smallest quantity of albumen that can satisfactorily be tested by heat.

I may here mention, incidentally, that I use this mode of examining urine in other diseases beside dropsy, and without any expectation of meeting albumen. When urine with a copious sediment

occurs, and it is desirable to ascertain whether it consists of uric acid and the urates, or of the earthy phosphates, I pour off the clear urine, and heat in a spoon the sedimentous urine which remains at the bottom. If the sediment consist of uric acid and the urates, it becomes perfectly clear before the heat is raised to the boiling point; and the sediment is restored to exactly its former state on cooling. If the sediment consist of the earthy phosphates, no such changes can be produced.

The quantity of urine in this disease is variable, being not remarkable for scantiness, as is the case in other dropsical diseases. On the contrary, in most cases it is nearly equal to the drink, and in some cases exceeds it, approaching in this respect to the diseased secretion of diabetes.

The state of the skin is one of the most important facts connected with the disease. In all my cases perspiration was extinct, except in a few in which it occurred in the head, or in a transitory manner in the palms of the hands. When the perspiration was restored, in every instance a removal of the dropsical swellings immediately fol-

lowed. As this part of the subject, however, leads directly to the plan of treatment which I have to recommend, and which differs from that hitherto adopted, I shall postpone this, along with the consideration of the other symptoms of this remarkable disease, to the next opportunity.

PART II.

READ BEFORE THE COLLEGE OF PHYSICIANS,

JANUARY 18, 1835.

On a former occasion I stated the facts which appeared to me to prove that albuminous urine, when continuously secreted, ought to be considered as a symptom of disease of the kidneys. Since that time I have continued to enjoy the same opportunities of observation as before; and, though I have anxiously sought for evidence, either adverse or favourable to this opinion, I have not met with a single instance of urine coagulating in a constant manner, in which an opportunity of examination

after death was afforded, that did not present the disease of the kidney; nor, on the other hand, an instance of the disease being found in the kidney after death, in which, on taking a specimen of the urine in the bladder, it did not coagulate. On a review of the notes of all the fatal cases I am also enabled to state, that the extent of the disease discovered after death has been, in every instance, in proportion to the degree of coagulation. Thus, when the urine only frothed on the application of heat, the kidneys, although gorged with blood, contained the grey, granulated structure exclusively in the outer portions of the cortical substance, and especially at the extremities of the gland; while in cases of complete coagulation, the entire cortical substance was filled, or rather superseded by the deposition now mentioned, and the tubuli were both compressed and rendered indistinct. In some of the cases which have last occurred, I have also to mention that the emulgent veins were filled with a substance resembling the buffy coat of the blood, but of a curdy texture.

I wished to pause before bringing forward this

second part of my observations, in order to be enabled to ascertain the precise effect of several remedial agents. I was much surprised to find that this disease, which last year and in former years had been so frequent, had now become comparatively rare; and consequently a greater delay took place than I had anticipated. During this summer and autumn, however, it has been nearly as prevalent as formerly. The fact appears to be, that chronic as well as acute diseases take place more in consequence of peculiar changes in the atmosphere, than from any other agency acting on our organization. They, like acute diseases, occur epidemically, but move as it were in a larger cycle, and cannot be observed in a limited space of time; and hence their epidemic character has escaped notice. Those who have the charge of large hospitals will, however, be able to recall to their recollection periods in which chronic rheumatism, dropsies, chronic bronchitis, or diarrhœa, prevailed, as well as those which were signalised by the simultaneous occurrence of acute diseases.

I have been favoured by a communication from

Dr. Barlow, of Bath, referring to a paper on dropsy with coagulable urine, published by him in the *Midland Medical and Surgical Reporter*, in May, 1832, which I regret not having seen. He has no doubt of the general truth of Dr. Bright's conclusions, and has considered him to have established the fact of a connexion subsisting between organic disease of the kidney and coagulable urine. I am happy to bring forward, from so eminent a practitioner, this additional evidence, of which I was not aware when I wrote the first part of this paper. Dr. Barlow has had the kindness to mention the particulars of a case which appeared to him one of albuminous urine arising from a derangement, *only functional*, which I shall give in his own words:—

" One of the earliest and most remarkable cases of the acute kind that I have met with, occurred in a hale, active man, who became a patient of the Bath United Hospital in May, 1830, for extensive dropsy of a highly inflammatory kind. The urine, when first tested in this case, coagulated by heat alone into a solid mass. By active treatment he got well, and was discharged in July. This man, a common

labourer, has continued well ever since—in constant work; to which he would hardly have been equal, if organic disease of the kidney, such as Dr. Bright has described, had remained."

With the utmost deference to very high authority, I conceive that the above case is an instance of *merely functional disease.* The continuous morbid secretion, always presenting the same difference from the healthy state, and accompanied by effusions into the cellular texture, are evidences of *a change, not fugacious, but permanent;* and when the cure of such a case is obtained, there is as much evidence of an organic disease being cured, as when a hepatitis, or gastritis, is brought to a successful conclusion. Although the highest acknowledgments are due to Drs. Bright, Gregory, and Christison, by whose extensive collections of facts, and laborious investigations, the connexion between albuminous urine and disease of the kidney was first ascertained, (a connexion which previously had been barely suspected,) yet the fact which they have established has not been at all examined with

reference to the influence which it ought to have on the treatment of the disease, and has hitherto remained unproductive. In those cases the urine differs from that of health by the presence of a considerable portion of albumen, and by the deficiency of urea. The quantity of the secretion, however, is variable, being more frequently in the healthy proportion to that of the drink than diminished. This last circumstance, occurring in a great majority of cases, first led me carefully to observe the perspiration, and the state of the skin. The result of my observations has been, that this peculiar disease stands in an intimate relation with the suppression of the healthy discharge from the skin, its connexion being so constant, that they may be fairly presumed to stand in the relation of cause and effect.

The force of the circulation in this disease appears to be depressed by the action of some specific agency not as yet ascertained. The surface and extremities are uniformly cold—the latter being either livid or pallid; and, on reviewing my

collection of cases, I find that in all of them the pulse was low, undulating, and ranging from sixty to ninety, except when they were complicated with inflammations; and that in those cases it was considerably less frequent than usual.

The perspiration was either completely extinct, or confined to occasional breakings forth in the head or chest, the palms of the hand, or soles of the feet. The skin was dry and shining, harsh to the touch; and, on examining it with a lens, the usual eminences belonging to the orifices of the follicles were no longer to be found, and the orifices themselves were hardly perceptible, except when they appeared like black dots, in consequence of being filled with the residue of old secretions.

Whenever general perspiration came on, either spontaneously, or in consequence of medicine, then the cases always terminated favourably.

The suppression of the cutaneous discharge must be attended with important changes, if we consider merely its quantity as determined by several observers. And although there is a great difference in

the results of their observations, yet they ought not to be passed over in our estimation of this the most remarkable and most uniform circumstance connected with the disease.

According to Dr. Bryan Robinson of this city, the perspiration is to the urine as 1340 to 1000 in youth, and as 967 to 1000 in old age.

Sauvages, who resided in the South of France, found that from sixty ounces of ingesta were passed off five ounces of fæces, twenty-two ounces of urine, and thirty-three of perspiration. Gorter, in Holland, assigned to the excretions nearly the same proportions; while Dr. Keill, of Oxford, found the perspiration to be less than the urine in the proportion of thirty-one to thirty-eight. This, however, was objected to by his contemporaries as being the result of a too liberal allowance of wine, the diuretic effect of which is well known. According to Linnings, who made his observations in South Carolina, the perspiration exceeded the urine during the five warmest months of the year, but was exceeded by it during the seven coldest. In all

these observations it was proved that the perspiration was most abundant in youth, and the urine most abundant as old age approached.

While those observations are sufficient to show the average proportion of superficial exhalation, and of urine, in a state of health, they are incomplete in not determining the proportion of exhalation of the lungs, as distinguished from that of the skin. This latter deficiency was supplied by the experiments of Lavoisier and Seguin. These were principally performed by placing an individual in a bag of gummed silk, accurately fixed round his mouth. The difference between the ingesta and the sum of excretions, and the weight acquired by the bag, gave the amount of pulmonary exhalation. This experiment was varied in different ways; and the result was, that the cutaneous was to the pulmonary transpiration as eight to five. Although it is much to be desired that those experiments should be repeated, and although, even in the most skilful hands, much diversity of result would be the necessary consequence of the difference of temperature, of age, and of constitution, yet enough has

been ascertained to prove that the fluid which is thrown off by the skin in health is to the urine, on the average, as ten to eleven. If the quantity of the cutaneous discharge is imperfectly ascertained, its chemical analysis is no less a desideratum. It is known to be decidedly acid, and to contain most of the fixed salts which are found in the urine; and when the water of it has evaporated, it leaves a deposit which is irritating to the skin, and in hot climates creates a necessity of constant ablution and change of apparel, in consequence of the acrimony which it acquires by heat. The sudden repression of this secretion in any given part of the body, is usually followed by an inflammation or excitement of some organ, or peculiar system of organs, according to the peculiar temperament of the individual. Thus, cold water long applied to the feet will produce in one inflammation of the conjunctiva, in another bronchitis, and in a third diarrhœa; or a partial draft of cold air blowing on the neck will cause in one cynanche, in another inflammation of the schneiderian membrane, and in a third rheumatism of the muscles of the neck,

according as the individual has been rendered liable to these affections by previous attacks of them, or by peculiarity of constitution. When cold is applied over the whole surface in a continuous manner for some time, and no inflammation or general fever has resulted, then an increased secretion from the kidneys is usually observed, and the necessity of frequent evacuations of the bladder during the frosts of winter has become proverbial, and is familiar to every one. When the suppression of the perspiration, however, instead of being transient, is rendered permanent, then permanent irritation of the kidneys is produced, and in the great majority of cases the result is the disease of the kidneys now before us; while in some comparatively rare instances diabetes, and in others more numerous chronic diarrhœa, with bronchitis, are the consequences.

On reviewing the causes of the disease in thirty-six cases, in twenty-two individuals it could be directly referred to suppressed perspiration. One of these was Thomas Leahy, a remarkably vigorous man, in his thirty-fifth year, of sober habits,

It appears that he was inconvenienced by the excessive perspiration of his feet, and that at the suggestion of a friend he wore fuller's earth in his shoes in order to repress it. The effect was immediate. The perspiration ceased not only in his feet, but also in every part of his body. Diarrhœa soon came on; and, when this was subdued by appropriate remedies, universal œdema, with coagulable urine, succeeded. Although, under the treatment adopted, the œdema was removed, yet the healthy action of the skin was never restored, and I am informed that his dropsy returned. In another of those cases the commencement of the disease was attributed to cold bathing: but the most frequent cause of it was remaining in wet clothes. As the excitement consequent on the suppressed perspiration takes place in the secreting portion of the kidney, and neither in the *tubuli*, nor in the membranes, no acute pain is perceived; and the patient is usually barely sensible of a weight in the loins, or of a thrilling sensation shooting down the thighs. Hence has arisen the obscurity which has attended the formation and establishment of this organic disease.

The next frequent cause is the abuse of diuretic drinks and medicines. Of the thirty-six cases, ten occurred in confessed drinkers of ardent spirits. One of these was able to follow his trade, until the circumstances attending the fire at the Custom-house afforded him an opportunity of indulging his passion for liquor. After drinking whiskey out of his hat to an extent which he was unable to define, he lay on the ground in a state of insensibility till late on the following day; and in addition to dry skin, and urine frothing by heat, he exhibited a complication of ulceration of the larynx, enlargement of the liver, and violent neuralgia of one of the frontal nerves. Yet in this individual the perspiration was restored, and he was freed of the œdema, and much relieved in all other respects. The confessed drunkards in my list of cases are limited to ten; but if we could ascertain the truth respecting the mode of life of all our patients, there is no doubt that many more would have been added to this number.

Diuretic medicines also have appeared to me to be a frequent cause of the disease. Squills and the

diuretic salts, although of the utmost importance in many affections of the thorax, yet when long continued, as they often are after the true indications for their use have ceased, become the means of bringing such on again by producing over excitement of the kidney, and this disease as a consequence.

With regard to the influence of other diseases. Of the thirty-six patients, four were scrofulous; three laboured under pericarditis; and three under valvular disease of the heart. This last connexion has been placed in rather a prominent point of view by Dr. Bright. In my cases the two diseases appeared to be combined only by both being the result of one cause, namely suppressed perspiration; and a great number of valvular diseases of the heart have occurred to me without any disease of the kidney, except the usual deficiency in secreting power; which, as a necessary consequence of impeded circulation, comes on towards the fatal termination of such diseases.

Of the thirty-six cases which came under my notice, two originated in the remarkable Influenza which visited us in the spring of 1833. That

epidemic was distinguished from most others by the following circumstances:—1st, The copious discharge of urine, which was observed in almost every instance, from the commencement to the termination. 2dly, The remarkable debility; and 3dly, The permanently pallid complexion which succeeded, and which in many young persons has continued, and thus deteriorated their appearance since that time. From those circumstances it is to be apprehended that many of the cases of impaired health, which commenced after that Influenza, were connected with suppressed perspiration, and that in them this peculiar disease of the kidney established itself. Besides the two cases now mentioned, I ascertained, in three or four cases of paleness of countenance after that Influenza, that, although unattended with swellings, yet the urine frothed on the application of heat.

Of the thirty-six patients, eighteen laboured under bronchitis in different degrees of intensity; eleven had gastroenteritic inflammation, denoted by thirst, vomiting, or diarrhœa; and the two diseases were in six instances combined in the same

individuals. Thus it appears that nearly two-thirds of the entire number laboured under inflammation of the mucous membranes. It is also to be observed, that in every case, before improved by treatment, the appearance of the mucus in the urine was such as belongs to irritations of the bladder and urinary passages, not forming a transparent cloud in the lower part of the vessel, as in health, but collected into dense opake flakes, and, for the most part, resting flat on the bottom of the vessel. The co-existence of those affections with the disease in question is best explained by this circumstance,—that they are all the effect of the one cause, namely, *obstructed perspiration*.

The fatal cases amounted to nine; and of this number four were amongst the confessed whiskey drinkers.

The mode in which death takes place when the disease is not disturbed by complication with other diseases is interesting, not only to the pathologist, but to the practitioner, who is thereby warned of the fatal tendency of certain symptoms which otherwise should be disregarded. In almost all my

fatal cases, when not complicated, it terminated life by the production of a low form of arachnitis; as was evinced by examination after death. This brought to light opacity of the arachnoid and fluid in the ventricles; the medullary fibres of the brain, however, being unusually firm and distinct. The invasion of this form of arachnitis was announced in the case of John Smith, (who laboured under pericarditis, with copious effusion into the pericardium,) by indistinctness of vision, and moaning during sleep, by gradually increasing somnolence, and depression of spirits; and on the day preceding his death he had several seizures of general convulsions, and remained in a state of stupor during the intervals.

In the case of Anne Doyle there was a large effusion into the right cavity of the thorax. About three weeks before death she began to complain of sounds in her ears resembling the ringing of bells. Although appropriate means were used to relieve the head, yet fits, with foaming at the mouth, insensibility, resembling that of epilepsy, and violent

pains at the vertex, continued, with intervals, to her death.

In the case of John Hacket, aged five years, who also laboured under enteritis, and in whom were found several knots of *intersusceptio* in the intestines, death occurred suddenly, but was preceded by convulsive contractions of the right arm; and in addition to opacity and adhesions of the arachnoid and fluid in the ventricles, there was a softening of the surface of the anterior convolutions of the brain.

In the case of Thomas Caffray, who had been relieved of the œdema, and of the most urgent symptoms of chronic bronchitis and emphysema, an imprudent exposure to cold, and subsequent excess in spirituous liquors, were immediately followed by diarrhœa and delirium; the function of respiration being nearly unaffected. Within three days from the invasion of those symptoms he was found dead in his bed, having walked about the ward in a delirious state within a few hours of his death.

In the case of James Brown, who also suffered

under pericarditis, the fatal event was preceded by a stupor of two days' duration.

In two cases which came under my examination since writing the above, the patients sank under a low form of peritonitis, which came on a few days before death. Those instances show the tendency to inflammation of the serous membranes, which the disease always produces, and which has been attributed to the acrimonious principles of the urine being no longer eliminated from the kidneys, and consequently communicating to the blood the property of irritating the more sensitive structures through which it is circulated.

Death took place in Catherine Reilly and Miss E., both scrofulous cases, from general debility; in James Kenny from bronchitis; and in Catherine Kavenagh from pneumonia, with broken down structure of the lung.

Thus it appears, both from the causes as related in the history of the individual cases, and from the average number of the accompanying affections, that this disease is connected more especially with suppressed perspiration, than with any other known

agency; but that it may also be produced by excitement of the kidneys from spirituous liquors.

Subsequent observations have convinced me that it is produced *in the most decided manner by a combination of both*, as when an habitual drinker is exposed to a long continued application of cold.

We now proceed to the consideration of the treatment.

A kind of dropsy was observed by Frank (de hom. curand. morb. 8. 153), characterised by no deficiency nor depth of colour in the urine, and with a tendency to diarrhœa, which he found to be more than ordinarily difficult to cure. In this we recognise the peculiar disease before us, and, at the same time, its obstinacy to the old method of treatment. My attention was first directed to the peculiarity of the treatment required in this disease, by observing that certain diuretics, when their use was long continued, not only failed in producing increase of the urine, but were followed by a marked diminution, almost amounting to a suppression of

that secretion. Having obtained possession of this fact, I separated the histories of the cases in which it occurred, and found them all to agree in presenting coagulable urine. Some few dropsical cases, without coagulable urine, in which diuretics did not take effect, certainly occurred; but these were connected either with impeded circulation, or extensive visceral affections. In such *all* the secretions were impeded, and therefore they did not disturb the truth of the general proposition.

When I attentively considered the cases of dropsy with coagulable urine, published by Dr. Gregory, I very unexpectedly found them to coincide with my observations. On examination of them, as recorded in the *Edinburgh Medical and Surgical Journal*, it will be found that the most remarkable diminutions of the secretion of urine occurred after the administration of squills and cream of tartar; while in other cases, in which the treatment was principally confined to bleeding and purgatives, the greater proportion of success was obtained. And without meaning, in the slightest degree, to detract from the merit of the several physicians who treated these cases, the necessity of bringing forward the

truth relating to the subject now before us, compels me to state the fact, that of their patients, amounting to eighty, forty-five died, being above one-half; while amongst the thirty-six cases which I have treated conformably to the views which I have endeavoured to explain, there were only nine deaths, being one-fourth.

When a patient was placed under my care, with general œdema, coagulable urine, and dry skin, I directed him to be kept in bed, in order to maintain warmth of the surface, which is usually disposed to be cold. It has happened frequently that, by external heat alone, an improvement both in the quantity and quality of the urine, and a material subsidence of the œdema, have taken place. The first medicine ordered was usually a purgative; and in the choice of this, in order to avoid ambiguity as to its mode of action, I abstained from the use of all those articles which are reputed diuretic; such as compound of jalap, or supertartrate of potash; and I generally employed the senna mixture. I then commenced a diaphoretic course, by administering foot baths, hip baths, or general baths; the last either of water or of vapour, accord-

ing as they appeared to agree best with the individual case, at night at the hour of going to bed[1]. The patient also took at night eight grains of Pulv. Jacob. ver. 4. of Pulv. Ipecac. c. Opio, and 10 grains of Confect. Aromat.

The usual drink was barley water. In case, however, of tendency to stupor, or headach, the Dover's powder was omitted, or given in smaller doses. In one case, in which no perspiration was produced by the above and other means, it followed the use of the following mixture: ℞. Aq. Acet. Ammon. ℥iv. Sulphur. Subl. ℥j. Vini Ipec. ʒj. Ext. Opii aq. gr. ij. Aquæ Fœnic. dulc. Syrup. Sacch. empyreumat[2]. utriusque ℥ij., one ounce to be taken every hour.

[1] I have seen that some practitioners prefer the employment of warm baths in the morning. But surely the less liability to cold, the greater tendency to perspire in every individual at night and during sleep, render the hour of going to bed the most expedient.

[2] The peculiar properties of treacle are better known to the common people than among the faculty. It is a popular remedy for cold, and when taken in quantity is a powerful diaphoretic, as I have often experienced. I know a healthy individual who cannot take more than a few table spoonsful of it, without undergoing a profuse perspiration.

When the vapour bath was not attended by perspiration, from want of reaction on the part of the patient, he was directed to take, while in it, two drachms of the Tinct. Guaiaci Ammoniat; when, however, (as sometimes happened,) both vapour and water baths produced coldness of the extremities, they were discontinued. It is to be observed that the drops of moisture which are condensed on the surface of the patient's body, while in the vapour bath, are often mistaken for perspiration. The occurrence of the latter can only be determined by ascertaining if the skin becomes moist after the patient has returned to the bed, which should, in every case, be warmed for his reception.

When there was a continued tendency to coldness of the surface, unaccompanied by feeble action of the heart, the diaphoretic preferred was Tinct. Guaiaci Ammoniat. ʒij. Sulphuris Loti ʒj. Mist. Camph. ℥j. Sp. Piment. ʒss., or the following: ℞. Carbon. Ammon. ʒss. Mist. Camph. ℥vj., an ounce to be taken every two hours. In connexion with these remedies, administered in the evening with a view to procure a perspiration during the hours of

sleep, warm applications were kept up during the day, and frequently a succession of bags of hot salt was maintained, when the heat of the extremities could not be otherwise preserved. When perspiration was restored in one part of the body, as in the trunk, but not in the limbs, the latter were rubbed several times during the day with an infusion of two drachms of bruised mustard seeds in distilled vinegar, with Naphtha[1], or some other suitable stimulating embrocation.

Having never failed in removing this kind of general dropsy *whenever the entire surface of the body was restored to a perspiring state*, it is not surprising that I should bestow the utmost attention on this part of the treatment. In a great number of cases, and especially those connected with bronchitis, the patient took three times daily, an ounce of the following mixture: ℞. Balsami Copaiba

[1] This liquid, (also known as pyroxylic spirit,) which is sold at the druggists, is highly volatile, and has a peculiar penetrating odour, to which the patient generally becomes reconciled. Its vapour has appeared to me to be advantageous in the cases of chronic bronchitis, with which this disease is so generally combined—the odour may be modified by the addition of Camphor ʒj. to the ounce.

ʒj. Misc. Gum Arab. ℥iijss. Sacch. g. s. ft. Emulsio. Adde Aquæ Cinnamomi Mist. Camph. utriusque ℥ij.—The use of this was first suggested by the appearance of the mucus in the urine, which in almost every case denoted irritation in the urinary passages; and in chronic bronchitis, with scanty and opake secretion, there is no more valuable remedy. Copaiba has been set down in the Manual of Materia Medica as a diuretic; but I never recognised this effect from it, except through its agency in diminishing irritation in the urinary passages. When given to patients who were kept under the influence of external heat, it always acted as a diaphoretic, and was peculiarly valuable in answering the indications usually co-existing in those cases.

Next in importance to the restoration of the function of the skin, and indeed in most cases expedient, as contributing to that great object, was blood-letting. It will be recollected that in Dr. Blackhall's work, and in the papers by Dr. Wells, and by Dr. Crampton, before the disease had been as yet traced to the kidneys, there was a

considerable body of evidence to prove the advantage of bleeding in cases of dropsy with coagulable urine. The circumstances which appeared to me to afford the strongest indications for general blood-letting were, 1st, the peculiar full and undulating pulse, which resembles that so commonly occurring in nephritis; 2dly, the co-existence of inflammation of other parts; 3dly, pain or weight in the region of the kidneys; 4thly, the appearance of blood in the urine. The blood drawn was not usually buffed; but the serum, in almost every case, was turbid, and especially, but not exclusively so, when the bleeding was performed within a few hours after a meal. In some cases cupping, or leeching, over the loins was resorted to, when there were some of the indications now mentioned; but when general blood-letting was forbidden by general debility, or other circumstances. Counter irritation over the region of the kidneys, is a practice which requires some caution in a disease attended with such languor of the capillary circulation, and in which there may often be danger of the formation of intractable ulcers. Yet the appli-

cation of moderate-sized blisters to the loins is a very suitable irritant, and calculated to promote the action of the diaphoretic medicines. The best mode of applying these is by lint steeped in tincture of cantharides, and covered with oiled silk. This has the advantage of superior cleanliness, of quicker action, and of not tearing the cuticle. Those vesications may be dressed with iodine ointment[1], or be healed rapidly by means of simple

[1] M. Coster has reported cases of dropsy successfully treated by the following preparations of iodine, viz. Hydriodate of Potash six grains, Iodine three grains, dissolved in one ounce of water, given in the dose of six drops, gradually increased to fifteen, in sugar and water; and by dressing vesications formed on the thighs with an ointment of half a drachm of Hydriodate of Potash, Iodine fifteen grains, and lard one ounce; also employing it in frictions to the soles of the feet and axillæ.

He has also made some curious experiments to prove the passage of the iodine through the different parts composing the animal structure. He injected a solution of starch into the bladder of a dog, and a solution of iodine into the rectum of the same animal. The urine in the former in a short time acquired a blue colour. He also injected the iodine solution into the rectum, leaving the bladder empty, in this case a blue colour was produced when the dog passed his urine into a vessel containing starch. (Journ. de Phar. Nov. 1834). I am obliged to state that I have not as yet been able to detect iodine in the urine of those who have been taking it, although I have not been unmindful of Dr. Clendenning's suggestion.

dressing, and thus a rapid succession of irritants be maintained.

With regard to purgatives: in many cases they were withheld, in consequence of the tendency to diarrhœa, which is so commonly observed in this disease. When purging, however, by the aid of medicine was required, those most frequently employed were the senna mixture, castor-oil, or rhubarb and magnesia. It is probable that in some of my cases other purgatives, such as gamboge, jalap, or crystals of tartar, might have been administered with considerable advantage; but I refrained from them for the reason before stated. In the management of those cases, purgatives should never be allowed to interfere with the administration of diaphoretics. They should, therefore, be given early in the morning, in order that their operations may be terminated before the patient is placed under the effect of the diaphoretics in the evening.

Calomel was administered in large doses, when affections of the head came on. These, however valuable in rescuing the patient from a state of

approaching coma, were yet followed by no benefit to the secretions of the skin, or of the kidneys; and I am induced to coincide with Dr. Bright in the opinion that mercury produces no beneficial result in this disease. It has also appeared to me to cause salivation in those cases with an unusual rapidity; an observation first made by Dr. Bright.

In two cases the general œdema was removed under the use of iodine (a grain and a half with three grains of hydriotate of potash dissolved in a pint of water, given in the day-time). As, however, both those patients were kept in bed, and by means of external heat a restoration of perspiration had been effected, they cannot be adduced as evidence in favor of the action of iodine in the disease. The object which I had in view in using it was to ascertain how far it would act in causing absorption of the morbid structure developed in the kidney. During the time of the residence of those patients in the hospital, the coagulability of the urine diminished very much, but did not disappear altogether; its colour and transparency were, however, completely restored. Had they been content to

have remained longer under the treatment, it is probable that a total absence of albumen in the urine might have been witnessed. In the majority of the other patients, dismissal from the hospital took place when the same degree of improvement had occurred in the urine, but before a total disappearance of albumen had been obtained; and as soon as the œdema was removed, the patients generally thought themselves cured, and became anxious to leave the hospital as soon as possible.

Individuals who have been thus relieved from dropsy by a restoration of the functions of the skin, are liable to relapses if exposed to cold, so as to produce a return of the cutaneous obstruction. Hence they ought to wear flannel next the skin, and to make a timely use of baths and frictions, in case of dryness of the surface recurring. For those in affluent circumstances a residence in a warm climate cannot be too strongly recommended. If the muscular forces permit, exercise should be used till the effects of it are perceived on the skin; and, as œdema of the legs may recur, in consequence of the previous distension and subsequent relaxation of the cellular

texture, it is expedient to wear bandages on the legs, until the ordinary vigour of health has for some time been established.

The diseases which were complicated with this affection have already been enumerated. The peculiar treatment which those complications required I shall now endeavour briefly to describe.

When combined with bronchitis, the use of Copaiba, as already mentioned, appeared of the most decided advantage. In dry bronchitis the following mixture usually caused free expectoration:—℞. Gum. Ammon. Gum. Arab. Sacchar. alb. singul. ʒij. Bals. Copaib. ʒ ss. Aquæ Cinnamomi, ℥ iv. A tea-spoonful to be taken every hour and half. In some instances in which the Copaiba produced nausea, it was superseded by the tincture of cubebs, a medicine which, although totally differing from it in botanical and chemical relations, yet agrees with it in medical as well as sensible qualities. When expectoration continued to be copious for a long time, without any benefit resulting therefrom, and the principal distress arose from its quantity impeding respiration, then, in conjunction with

the diaphoretic course, the administration of acetate of lead, one grain, and watery extract of opium, quarter of a grain, four times daily, caused a diminution of expectoration, and, at the same time, diminution of irritation in the air passages. The application of leeches externally to the larynx, the number varying from two to eight, is a most important part of the treatment of bronchitis. The good effects of it are not confined to the larynx, but are apparent also in the unloading of the mucous membrane of the bronchial tubes throughout their entire extent, causing a more immediate cessation of cough, and relief of dyspnœa, than any remedial measure which I have had an opportunity of employing. In addition, blisters should be applied to the upper part of the sternum, and under the axillæ. I have generally used also, in these cases, frictions to the back, and sides of the chest, with the stimulating embrocations already mentioned applied several times daily. Under the use of these and other similar applications, I have frequently had the satisfaction of believing not only that the bronchitis was at an end, but that portions of emphy-

sematous lung were restored to a healthy state. If asked for the evidence of this latter fact, I answer, that regions of the thorax, which had an unnaturally clear sound on percussion, and yet no audible respiration, or which presented the dry crepitus, and clear sound of emphysema, were, when subjected to this treatment, found gradually to resume the respiratory murmur of health, while the peculiar dyspnœa, characterized by longer expirations than inspirations, was at the same time removed, or notably diminished[1].

When irritations of the stomach or bowels occurred, they were met by nearly the same treatment as if the disease now before us was not present. Leeches placed over the affected organ, with warm applications externally, and a diet consisting of rice, or arrow-root, frequently removed them in a few days. A tendency to dysentery, which is one of the most

[1] It will be recollected how traumatic emphysema of the cellular texture under the skin is often absorbed with facility; and there is no reason why emphysema of the lung, caused by rupture of the air vesicles from violent coughing, may not, in like manner, be absorbed, when once the coughing has been stopped. And yet emphysema has been considered as incurable, and no treatment beyond palliatives is usually applied to it.

frequent forms of this complication, and which commences by tenesmus and general excitement, was most speedily removed by an enema of four grains of nitrate of silver, dissolved in eight ounces of distilled water, followed in three hours afterwards by the starch enema, with tincture of opium. The first is retained only a few minutes, but the last generally remains several hours, and the irritation is then at an end. Although the efficacy of these measures, no doubt, depends much on the promptitude with which they are applied, yet they have been found not to fail even in long protracted cases of chronic dysentery, when aided by other appropriate treatment.

When combined with pericarditis, the internal use of tartar emetic, in addition to topical and general blood-letting, produced a great increase of urine, with amendment of all the symptoms; while a decrease occurred on two several occasions, in which it was for a time superseded by squills. In valvular disease of the heart, and, especially, imperfect closure of the aortic valves, the patient, in addition to the diaphoretic treatment, took a

mixture of a small quantity of tincture of digitalis, with carbonate of ammonia, camphor, and Hoffman's liquor. This combination was intended to act as a sedative to the heart, and, at the same time, as a stimulant to the circulation through the capillaries. Whether it acted in this way or not, may be questioned; but it was certainly followed by warmth of the extremities, diminution of the violent action of the heart, a sense of general relief, and a capability of sleeping with comfort at night.

The measure, however, which appears to me of the highest importance in diseased aortic valves, is the establishment of a large issue over the region of the heart. On some future occasion I shall bring forward some faithfully reported cases, which prove that organic disease of the valves is capable of great amendment, if not of complete cure, by this and other counter irritants, aided by the administration of suitable internal remedies.

General œdema, with coagulable urine, and obstructed perspiration, is not unfrequently accompanied by effusion of serum into the peritoneal cavity. This, when not considerable, or of long

standing, disappears along with the general swellings. When, however, ascites has formed either in consequence of chronic peritonitis, or induration of the liver, then, although the general swellings have been removed, we have still to deal with a refractory, and often intractable complaint. In addition to the means which are usually adopted, viz. courses of mercury and purgatives, I am enabled, from experience, to suggest some other measures, to the employment of which I must attribute the fact, that within the last four years I can recollect only one case in which tapping was performed in my hospital wards, while previously it was a frequent operation. These are the repeated application of leeches to the rectum[1], so as to unload the vessels of the vena portæ. The applications of various stimulants to the abdomen, as 1st, an ointment composed of equal parts of iodine, mercurial, and cantharides oint-

[1] In the *Dublin Medical Journal* I have described a convenient mode of introducing leeches into the rectum, by securing them with silk threads attached to the grooves of an instrument prepared for the purpose.

ments. 2dly, A paste formed of Spanish soap, spread upon linen, and sprinkled over with muriate of ammonia immediately before being applied; which, by the chemical decomposition that ensues, and the consequent gradual extrication of ammonia, produces heat and redness; 3dly, Sinapisms, suffered to remain till the pain becomes urgent. These have the advantage of healing with great rapidity. 4thly, Frictions of six or more drops of croton oil. These are, however, rather uncertain; in some individuals producing no effect, and in others followed by erysipelas, extending beyond the seat of the application. 5thly, A mixture composed of one part of tincture of digitalis, and two of aquæ muriat calcis; a teaspoonful to be rubbed on the abdomen, morning and evening. This compound appears to excite the absorbents, and increases the discharge from the kidneys, but does not produce any sensible redness of the skin. The application of these counter irritants and excitants of the absorbents may be continued, when the administration of mercury and of drastic purgatives has become no longer advantageous, or indeed safe.

It is certain that by these latter remedies the distension of the abdomen may frequently be diminished to a certain extent; but beyond this it is extremely difficult to proceed. Whenever the peritoneum has engaged in the process of morbid secretion, and the cavity of the abdomen has remained distended a certain length of time, it obstinately perseveres in retaining a certain quantity of fluid. The urgent and continuous use of the powerful remedies now mentioned, in such cases, is then not only abortive, but, sooner or later, causes irritation and ulceration of the bowels; and the patient sinks in consequence. It is therefore preferable, in those refractory cases, when the swelling no longer diminishes under the employment of internal medicines, to abstain altogether from their use for a time, and to rely on the application of counter irritants and bandages, together with regulated courses of diet, and changes of air, until the patient's vital forces are recruited, so as to enable us to make fresh efforts to dislodge the fluid.

When noises resembling the ringing of bells in

the ears, wakefulness, delirium, stupor, or headach, come on, then, if there is increased heat of the head, blood must be taken either from the temporal artery, or by means of leeches applied to the temples, or behind the ears. Calomel must be freely given, and followed by brisk purgatives. If those symptoms continue, it will be necessary to apply sinapisms to the nape of the neck, and to persevere in the use of mercurials. These symptoms, which are always of formidable import in dropsies, and peculiarly so, because usually neglected, and erroneously supposed to belong to the disease merely as symptoms, may, under this treatment, be very generally averted; and it would be acknowledged, from an examination of the fatal cases recorded in my table, that, though the patients died immediately from the affection of the brain or its membranes, yet in most, if not all of them, peculiar circumstances existed, which had the effect of disarming the remedies now mentioned of their usual powers, and which, in those particular instances, rendered the disease necessarily mortal.

In conclusion: the observations which I have

been enabled to make on dropsy with coagulated urine have appeared to me to prove,

1st. That it is always connected with disease of the kidney, which, when sufficiently advanced, is marked by the deposition of a greyish structure, impermeable to injections, within the substance of that organ.

2d. That the suppression of perspiration is the most general cause of this disease; and the long-continued excitement of the organ by spirituous liquors, or diuretics, the next in order of frequency and importance.

3d. That the most successful treatment consists in the restoration of the functions of the skin; which being accomplished, the disease, if free from complications, never fails to be removed.

4th. That bleeding and purgatives are also suitable remedies; while diuretics are either injurious, or, if removing the swellings for a time, tend ultimately to cause a return of the disease, under a more aggravated and intractable form.

The constancy with which either this disease or diabetes is preceded by a continuous repression of

perspiration, renders it expedient that this state of the skin should be considered as a peculiar disease; for which purpose it may be called *Anidrosis.* The use of forming this designation, is, to direct the attention of practitioners to a morbid state, which escapes observation because not signalised by pain, but which is not only a disease in itself, but leads to many other and fatal diseases.

CASES ILLUSTRATIVE OF RENAL DROPSY.

CASE I.—*Renal Dropsy—Pneumonia—Arachnitis—Death.*

HENRY M'Mahon, aged 38. October 29, 1834. Anasarca of lower extremities; cough, and general soreness in the chest; pulse 84, soft; obscure crepitus heard throughout both lungs, especially in right, and some dulness on percussion; no perspiration, and states that it has always been difficult to make him perspire; appetite diminished; tongue rather dry in the centre; occasional diarrhœa; *urine coagulating by heat almost into a solid.*

Present symptoms came on about five weeks ago, and are attributed to wet feet. He confesses to have been addicted to drinking whiskey. On his arrival in hospital, two days ago, he commenced the use of the warm bath, and the swellings have diminished. Mittant. sang. ℥viij. ℞. Sulphuris ʒi. pulv. Jacobi veri gr. vi. pulv. Doveri gr. ij. syrup. sacch. emp. ℥i. confect. aromat. gr. x. ft. bolus ter in die sumendus. 30th. Blood buffed and cupped. 31st. Appears stupid; pulse 72; omitt.

bolus abr. capill. vesicat. pone aures. Mist. sennæ camph. ad effectum. Nov. 1. Sleeps constantly, except when roused; pulse 60. Mitt. ex arteria temp. sang. ℥vii. vesicat. amplum occipiti. Enema terebinth. mist. cardiac. ℥i. o. h. calomel gr. iv. quartis horis. 3d. He was roused for a few minutes after the blood was taken, but died in the evening.

NECROSCOPIA.—Kidneys enormously enlarged, and filled with granulated structure, especially at their lower part; the tubuli almost extinct, except at the upper portions; the greyish structure projecting at the outer surface of the kidneys in roundish masses; renal veins filled with clots of a grey colour; lungs engorged, and in different stages of pneumonia throughout their whole extent; effusion of copious mucus into the bronchiæ; old adhesions between the pleuræ; brain highly vascular towards the left parietal bone; veins much congested; no collections of fluid at the surface or in the ventricles.

CASE II. — *Renal Dropsy — Tuberculated Lungs— Skin obstinately obstructed—Enteritis Arachnitis— Coma—Death.*

Susan Stedman, aged 20. Dec. 17, 1835. General œdema; skin dry; extremities cold; thirst; some cough. No disease of the lungs to be detected

by auscultation. Catamenia absent during the last six months; pulse 70; urine coagulating by heat. The swellings commenced in her feet about two months ago. 25th. She has been bled, has taken James's powder and calomel, with the turpentine draught occasionally. As the extremities continued cold, she got the cardiac mixture (a compound of camphor, carbonate of ammonia, and Hoffman's liquor), and had bags of hot salt kept to her extremities. The swellings are now much diminished, and the extremities maintain a better temperature, but no perspiration has taken place. ℞. Sol. iodinii fort. ℥iiss. tinct. capsici ℥ss. ℳ. Infricetur ℥ss. lumbis ter in die. Cont. mist. card. Hot salt to be applied. 31st. Swellings continue to decline. Sum. sulphuris ʒiss. ter in die. Cont. cæt. 8th. Appears stupid. Hirud. viij. temp. elect. jalap. ad effectum. 9th. Stupidity diminished. Enema fœtid. Semicypium. cal. gr. iv. h. s. mist. sennæ c. m. 11th. No effect from purgative medicine. Tenderness of abdomen; stupidity less; vesicat. abdomini. ℞. Cal. pulv. Doveri utriusque gr. iij. ℳ. tertiis horis sumend. mist. rosæ cathart. ℥iss. secundis horis ad effectum. 17th. Gums have become sore, and a good operation has been obtained from the camphorated senna mixture, after the failure of several others. Appears more lively; pulse 96. 18th. The stomach very irritable, retaining only saline

draughts. Stupidity returns, with heat of head. Vesicat. nuchæ, haust. eff. 19th. Pulse almost imperceptible; stupidity; stomach still irritable. A poultice on the stomach; cal. gr. iij. tertiis horis; sinapisma capiti. White wine whey. 21st. Stupidity continues; face flushed; complains of pain in the region of the heart; pulse 120. Stomach now quiet. Thirst. Dej. 2. Urine scanty. ℞. Tinct. digital. gutt. iij. in haust. efferv. secundis horis, cont. calomel. vesicat. abdomini. 22d. Vomiting has returned. Dejections passed involuntarily. Is sensible, but very weak. Soda water and almond emulsion for drink. Cont. calomel. 23d. Urine passed involuntarily; tongue dry, brown; bad sleep; pulse 120; black dejections. 24th. Died last night.

NECROSCOPIA. — Subcutaneous cellular tissue universally distended with serum; effusion of serum into right pleura and pericardium; heart very small; valves all perfect. In the right lung, at the apex, a large tubercular cavity communicating with a bronchial tube. Smaller cavities adjacent to it. Both lungs, except the lower portions of the inferior lobes, filled with small round tubercles in various stages. About two quarts of serum in the peritoneum: that membrane thickened and opake. The liver easily broken down, resembling a spleen. Mesenteric glands enlarged. Kidneys large; cortical substance filled with granular structure, and not

containing a trace of blood. A strong urinous odour was perceived from them. Mucous membrane of intestines of a greenish white colour. Brain, between the dura mater and arachnoid, more serum than in health, and still more in the sub-arachnoid tissue. Slight congestion in the vessels of the pia mater at the left side anteriorly. But little effusion into the ventricles. Medullary substance rather darkish: brain in other respects sound.

CASE III. — *Renal Dropsy in an incipient stage. Removed under treatment.*

Thomas Johnston, aged 53, shoemaker, admitted Nov. 3, 1833. Œdema of face and ankles first observed about ten days ago. Urine limpid, almost devoid of mucus, frothing on the application of heat. Skin dry; pulse 60, lingering and weak. Appetite, &c. natural; but during the last three months has suffered from distension of the stomach after eating. Drink 2½ pints. Urine 3 pints daily. ℞. Tinct. cubebæ ℥ss. mist. amygdal. ℥viiss. m. ℥i. tertiis horis. Ordered to keep his bed. 4th. On examination with a lens, the papillæ of the skin are shrunk. Perstet. 8th. Swelling diminished. Some perspiration after a bath last night; pulse 84. Cont. mist. bal. tep. alternis noctibus. 16th. Œdema gone. Diarrhœa, with some tenesmus, has come

on. Pulv. Doveri gr. x. h. s. cont. cæt. 18th. Enema amyli. 20th. Bowels now free from irritation. 27th. Urine now no longer froths on the application of heat. Dismissed free from complaint.

CASE IV. — *Renal Dropsy at first aggravated by diuretics. Removed under treatment. The perspiration not restored.*

Bridget Flynn, aged 65, widow. Nov. 8, 1833. Universal œdema; urine coagulating by heat; severe cough; translucent expectoration; pulse 82; bronchial sounds in the chest; decubitus easiest on the right side; is frequently obliged to sit up; no perspiration; drinks about four pints in the day, and passes five; bowels habitually confined; catamenia long since extinct; duration of complaint two months; commenced on recovery from the influenza. Mist. sennæ camph. ad effectum. Hot salt to be kept constantly applied to the abdomen. ℞. Pulv. Jacob. ver. gr. x. pulv. Dov. gr. iv. confect. aromat. ℈ij. ℳ. ft. bolus vesperi et nocte sumendus. 11th. Sleeps better. 12th. Skin continues obstinately dry; swellings rather increased. Sol. gambog. alkalin. gutt. xx. secundis horis ad effectum; enema terebinth. pil. cal. et scill. ter. in die; omitt. cætera. 15th. Swellings increasing; no effect from the drops; haust. tereb. mist. cubebæ et

amygdal. ℞. Vini ipecac. tinct. cubebæ utriusque ℥ss. bicarb. ammon. ʒij. aquæ menth. ℥vij. sum. ℥j. cum succi limon. ℥ss. omni hora; omitt. cætera. 18th. Œdema declining; cough better; no perspiration; haust. terebinth; urine coagulating as before; perstet. 25th. Swellings nearly gone; was dismissed in a few days.

Case V.—*Renal Dropsy removed by treatment.*

Michael Donoghoe, a drayman, aged 38. Admitted August 27, 1836. General anasarca; swelling and fluctuation of the abdomen and scrotum; slight cough, with saltish expectoration; some dyspnœa, and tenderness of epigastrium; urine of the usual quantity, coagulating by heat; skin dry; pulse, tongue, and appetite, natural; bowels regular; complaint of one month's duration; attributed to a severe wetting; commenced with dyspnœa, chilliness, headache, nausea, thirst, and a constant wish to pass urine, which was at first diminished and turbid; was bled eight days ago; confesses to have been addicted to spirituous liquors. Admov. cucurbit. lumbis et mitt. sang. ℥x. ℞. Sulphureti potass. gr. x. sulphureti antimonii gr. ij. syrup. empyreumat. ℥i. ℳ. ft. haustus ter in die sumendus. 29th. No sensible effect observed from the draughts; swellings diminishing; vesicat. ij. lumbis. ℞. Olei

tereb. ℥ss. gambogiæ gr. i. ℳ. sum. statim; cont. cæt. 30th. No effect produced on the bowels; urine increased; camphorated senna mixture; cont. haustus. 31st. Swellings steadily declining; cough and dyspnœa much diminished. ℞. Sulphuris lot. ʒij. aquæ fænic. dulc. ℥v. sp. amm. aromat. ʒij. syrupi croci ʒvj. ℳ. sum. ℥i. ter in die. 7th. Swellings entirely gone; skin now warm, but not perspiring; has been obliged to take the senna mixture occasionally; yesterday and to day complains of headache; vesicat. pone aures. 8th. Headache gone; was dismissed in a few days. N. B. He was kept constantly confined to bed till within a week of his dismissal.

Case VI. — *Renal Dropsy with accompanying enteritis, bronchitis, and arachnitis. Perspiration restored. Disease removed.*

Eliza Levy, aged 18. Admitted Oct. 21, 1834. Universal œdema; skin dry; extremities cold; urine coagulating; mucous deposit lying in form of a flake at the bottom of the vessel; appetite defective; great thirst; tongue dry towards the tip; pulse 108. Duration of present symptoms three weeks. Was partially removed, but has come on to its present extent within the last four days; cause not ascertained. ℞. Pulv. Jacobi ver. gr. viij. pulv. Doveri gr. iij.

conf. aromat. ℈j. ℞. ft. bolus h. s. sumendus; bal. cal. vesp. For drink, barley water. 23d. Urine increased; no perspiration. ℞. Aq. acet. ammon. ℥ iv. sulphuris loti ʒij. vini ipecac. ʒss. syrup. empyr. ℥ij. aq. fæn. ℥ij. ℞. sum. ℥j. secundis horis. rept. bal. omit. bolus. 27th. Extremities warmer; swellings diminishing; appetite improving; perstet. 29th. Œnema of face has recurred; camphorated senna mixture; bal. vesp.; cont. mist. 31st. Skin warmer; œdema of face stationary; no perspiration; mittant. sang. ℥x. ℞. Carb. ammoniæ gr. ij. pulv. Jacobi ver. gr. x. sulphuris ℈j. confect. aromat. ℈j. ℞. ft. bolus h. s. sumend. bal. h. s. infus. lini ℔iij in die. Nov. 2d. Some perspiration last night, but confined to the head; blood buffed and cupped. 3d. Repeat bolus; bal. vaporis. 5th. Anorexia; pulse 130. Pulsating sensation in the head; some perspiration after the vapour bath; haust. efferv. omni hora; omitt. cætera. 6th. Pulse 120; heat of skin; epistaxis this morning; hirud. vj. temp.; cont. haust. efferv. Head to be shaved, and cooled with an evaporating lotion. 8th. Thirst, diarrhœa, headache, sleep interrupted by dreams; pulse 116; vesicat. ij. pone aures. hirud. xij. regioni ventric. mist. acet. plumb. ℥i. secundis horis. Enema amyli. cum opio h. s. urgent. diarrhœa. 10th. Diarrhœa diminished: dreams continue; mitt. sang. ℥xij. cont. mist. plumbi. Hot salt to the feet. 11th. Blood buffed

and cupped; pulse 128; sleep improved; perstet. 12th. Headache continues; mitt. ex art. temporali sang. ℥x. cont. mist. 13th. Rep. arteriotomia. vesicat. nuchæ. 15th. Head now relieved; severe cough has come on; vesicat. sterno; cont. mist. 16th. Hirud. vi. laryngi. 20th. Cough continues; diarrhœa gone; pulse 120; nausea; thirst rep. hirud. et mist. 22d. Headache and cough much better; perspiration occurs at night on the chest and arms; pulse 116; bronchial sounds in both lungs; urine transparent, frothing, but not coagulating; rep. hirud. laryngi. ℞. Bals. copaibæ ʒj. muc. gum. Arab. ℥iv. sacch. alb. q. s. ℳ. ft. emulsio; adde tinct. opii vini ipecac. utriusque ʒij. aquæ cinnamomi ℥iij. ℳ. sum. coch. med. omni bihorio. Dec. 1st. Cough and diarrhœa have entirely ceased; appetite returns. 11th. Swellings gone; no perspiration within the last few days; bal. cal. vesp. ℞. Pulv. guaici ℈i. pulv. Jacob. gr. viij. pulv. Doveri gr. ij. syr. empyr. ℥i. ℳ. ft. haust. h. s. sumend. 12th. Thinks that she perspired. 23d. ℞. Tinct. guaic. Ammon. ʒiij. sp. pimento ʒi. mist. camph. syr. empyr. utriusque ʒvi. ℳ. ft. haustus post bal. cal. sumend. 24th. General perspiration after the bath. 29th. Dismissed free from complaint.

PART III.

DROPSIES PRODUCED BY IMPEDIMENTS TO THE CIRCULATION THROUGH THE HEART, OR THROUGH THE LUNGS.

I. *Impediment at the mitral opening.* This may arise either from defective action of the valves or from narrowing of the orifice, and both of these are occasioned by adhesions or ossific deposits. The symptoms of both are nearly the same, but more intense in narrowing of the orifice. They are as follows:—1. Palpitation and oppression of breathing on exercise. 2. Dull sound on percussion, chiefly in the region corresponding to the auricles, *i. e.* upwards and towards the left mamma. 3. A sensation resembling that communicated by the vibrations of a saw, or of a file, when the hand is placed on the heart; and a sound resembling the same, or rather that of a bellows, when the naked ear, or the stethoscope is applied. 4. Cough, with more or less bloody expectoration, and the other symptoms of pneumonia; and along

with these, large discharges of blood not unfrequently occur in consequence of pulmonary apoplexy, which is almost exclusively produced by disease of these valves. 5. The patient lies with most ease on the right side, or forward towards his face. 6. The pulse is not necessarily affected till the passage from the auricle into the ventricle has become difficult, then it is small and weak; and in proportion to the same difficulty the extremities become cold and œdematous. The face is frequently swollen at rather an early period, and before the real seat of the disease is suspected. Intermission or irregularity of the pulse, as they do not depend on mechanical obstruction, but on debility of the organ preventing it from maintaining its accustomed rhythm, either may or may not be present, and they are not to be taken as diagnostic of this, or of any other valvular disease of the heart.

In enumerating the above symptoms as strictly belonging to obstructed or permanently opened passage, from the auricle to the ventricle, at the left side of the heart, I am guided by a review of a great number of cases, and dissections, and am anxious to impress on the mind of the reader my conviction, that they are sufficient to enable him to form a diagnosis of the disease. The sounds of the heart have been too exclusively dwelt on, by most writers, since the time of Laennec, while

the peculiar symptoms occasioned by the mechanical derangements of the circulation have been in the same proportion neglected. By some the sounds alone have been thought to diagnose affections of the aortic or mitral valves, according as they accompanied the long or the short vibrations of the heart; but as they may be produced as well by the fluid regurgitating backwards as by its passing forwards, it is impossible, and besides who ever hears those sounds accompanying the short vibration, unless when also heard with the long one?

Imperfect aortic valves have appeared to me long since to be the most frequent of all diseases of the heart, belonging to advanced life, and to hold in this respect the same rank as emphysema in the lungs, and softening of the brain, do as climacteric diseases, which in the great majority of those who have survived the affections arising from the various noxious influences to which we are all subject, are destined to terminate their present state of existence. Those valves which when the ventricle relaxes after its contraction, prevent the regurgitation of the blood from the arterial trunk, are so adjusted that at this time they are distended into the shape of cups, while the small triangular space in the centre of them is closed by the corpora aurantia. A very minute deficiency in their size is followed by an escape of some fluid back into the ventricle.

This deficiency may be caused first by dilatation of the heart; rendering the orifice too large to be closed by the valves; secondly by thickening of the valves, and consequent retraction of their margins; thirdly, by rupture of a valve; fourthly, by ossific deposits projecting within the orifice, and thus preventing their contact. The consequences are the same. Regurgitation of blood takes place after each contraction of the heart; the left ventricle is unduly distended; violent action is the consequence, and thus not only dilatation, but hypertrophy is induced, and the symptoms now to be enumerated are the necessary result of this state.

The symptoms of imperfect aortic valves are 1. Bounding[1] of the *larger* arteries. 2. A dull

[1] This appearance has been to me a source of much perplexity, and the value which I attach to it, being founded on facts, which may appear to some uncertain; the attention of the reader is requested to the following particulars:—First. There is a great difference between bounding of the larger and smaller arteries with regard to the cause producing it. I this day examined the wrists of the gentlemen of the clinical class, all of whom were in the enjoyment of youthful vigour and good health. In eight out of nine of them then present, there was bounding of the radial arteries. The individual who had not the bounding, although remarkably muscular, yet has an unusually small pulse, and in him it can be produced in the temples by exercise. In all persons it is much more evident in Summer than in Winter; and in cold weather it often becomes imperceptible. Second. Bounding of the brachial artery cannot be produced by any exercise, however violent, in

sound on percussion, extending across the lower part of the sternum to the right side. 3. Exercise producing a feeling of distress, distinctly referred to the region of the heart, and not connected

those who have it not when at rest. Third. Of a number of patients in the hospital in Summer, who had bounding of the radial arteries; there were four who had also bounding of the brachial and subclavian arteries, and in all of these there was evidence of disease of the heart, viz. palpitations on exercise, dull sound around the cardiac region, or *bruit de soufflet*. Fourth. In every case which has been under my care since my attention has been attracted to the subject, (*i. e.* within the last six years,) in which there was bounding of the larger arteries, when terminating fatally, and examined after death, some imperfection of the aortic valves, necessarily producing regurgitation from the aorta into the heart was detected. The imperfection of those valves which is most apt to escape notice is thickening, which to superficial observers appears to be the natural structure; and I have seen reports of dissections, in which this great mistake must have been committed. A good mode of ascertaining the healthy state of the aortic valves, is by comparing them with the valves of the pulmonary artery of the same individual. The latter are so rarely diseased, that they may in the great majority of cases, be appealed to as specimens of the healthy state, and almost closely resemble the aortic valves in the healthy state.

It is to me subject of regret, that I am unable to illustrate the connexion between regurgitation and bounding of the larger arteries by experiment. On injecting into the aorta a warm fluid of the consistence of the blood with a large syringe, and by a powerful arm, in jerks so as to imitate the contractions of the heart, no visible pulsations could be produced in any artery, and only a faint pulsation resembling that occurring in a low fever could be felt by the finger, but could not be perceived by the eye. Thus I was dis-

with respiration. 4. A sound resembling that of a bellows, often more audible in the larger arteries, and especially in the right subclavian than in the heart; sometimes perceptible to the hand applied over the heart, when it cannot be recognised by the ear; sometimes entirely absent, but when loudest then denoting ossific projections on the valves. 5. Increased action of the heart, and preternatural strength (not quickness) of the pulse: the force of the pulse being always remarkable even when not increased under the excitement of exercise. It is

appointed in my expectation of establishing by experiment what I believe is the fact, that in order to produce bounding of the brachial and subclavian arteries, there must not only be increased action, but also regurgitation.

Arteries in bounding are turned aside from the straight line and describe a greater number of curves. This is a necessary consequence of their elongation from the additional blood rushing into them, their extremities being fixed points. In the healthy state this only takes place in the smaller arteries to which the impetus from the heart ultimately tends; but when imperfection of the aortic valves exists, then not only is the bounding of the smaller arteries greatly increased, from the increased impetus of the more capacious and hypertrophied heart, but a new phenomenon, namely, bounding of the larger arteries, (entirely quiescent in the healthy state.) takes place in consequence of regurgitation into the heart. In this case the bounding takes place in both lower and upper extremities, and it thus occurring in all the arteries is a proof that it must be derived from the heart. See fig. 2, in which the dotted line represents the curves described by the artery in these cases at each contraction of the heart.

also to be noted, that in some rare cases when the heart has attained an enormous size, the motions of it cannot be perceived either by the hand or the ear, a state which is perhaps to be attributed to the compression exercised on it by the pericardium and surrounding parts.

Œdema and coldness of the extremities are more early attendants on disease of the mitral than of the aortic valves. The mitral valves are affected by far more frequently in females, while men are more subject to disease of the aortic valves. The cause of diseased mitral valves in all the cases in which I was able to trace it, was inflammation from cold contracted in various ways; and to this may be attributed the frequent occurrence of disease of those valves along with pericarditis. The causes of diseased aortic valves are more numerous, and are as follows:—1. Inflammation from cold, producing a thickening and consequent retraction of them, or else ossific depositions. 2. Severe muscular exertions causing dilatation at the orifice of the aorta, or rupture of the valves, and sometimes both combined. 3. Pressure from without on the region of the heart[1]. 4. Chronic bronchitis and emphysema of the lungs,

[1] Shoemakers rest the last on the sternum towards the left side, and tailors in this country constantly stoop forwards at their work. Both are peculiarly liable to diseased aortic valves.

which when long continued, cause difficult transmission of the blood. In protracted cases of this kind, a careful examination will often detect considerable breaches in the membrane forming the valve and sometimes its edges appear as strings separated from the rest. Those morbid changes have hitherto been very much overlooked from the prevalent notion that ossification is the only disease to which the valves are liable.

Diseases of the valves of the right cavities of the heart are exceedingly rare. I have seen only one instance of diseased valves of the pulmonary artery. The consideration of them therefore may be omitted in a practical point of view.

With regard to the treatment—I would premise that as the valves are part of the living system, they are not to be considered as beyond the restorative powers of nature. There can be no doubt that they are furnished with absorbents, and that as they are subject to disease, so they are also capable of curative processes. Hence it appears, *à priori*, possible that counter-irritants, and remedies which have the power of exciting absorption, should cause favourable changes in the structure of those valves, and consequently in their mode of action. In order to ascertain whether this actually took place, in several instances I carefully abstained from the use of internal remedies, and for a time confined the

treatment to the application of leeches and blisters on the region of the heart. The effect was in every case, except those of old date, decidedly beneficial. In many, dropsical swellings disappeared, and sleep was restored within a week, with an increased fulness and softness in the pulse, which in those individual cases could only be explained by a greater facility in the transmission of the blood through the heart, having taken place in consequence of the re-establishment of a more complete action of the valves. As those measures are applicable to every case, and do not interfere with any others in the treatment of these diseases, to them the first place must be assigned. Blisters may be applied almost immediately after leeching, by covering the leech bites with small pieces of paper, or adhesive plaster. After those have been some time in use, it is most expedient to place an issue or seton over the heart, which, although inferior to the former, yet when once established, is less under the controul of the patient.

Digitalis, by far excelling all narcotics in its sedative action on the heart, is only required when there is irritability of that organ, above what is required for carrying on the circulation. As the alternate filling and emptying of the heart must be incessantly kept up, or life is extinct, it is manifestly injurious to debilitate the organ performing these

functions when it already labours under peculiar mechanical difficulties imposed on it by disease. Sometimes, however, the heart is rendered morbidly irritable; of which we see instances in pericarditis, in rheumatism of the heart, and in nervous excitements, producing great frequency and force of pulsations. The same occurs in connection with disease of the valves, and the existence of this state is to be inferred from over action of the heart, to be felt by application of the hand, from increased quickness and frequency of the pulse. By these, taken in connexion with the peculiar circumstances of the case, the use of the Digitalis is to be determined. When it has produced softness of the pulse when hard, or reduced it to the natural standard when over frequent, a continuance of it is useless, and may become dangerous. The diuretic virtues of this medicine are always most apparent, when given in pursuance of this rule; and although it possesses an acrid principle, which is capable of irritating the stomach, and which very possibly acts on the kidneys, when taken into the circulation, yet its diuretic effect in almost every instance appears to be in consequence of its allaying the inordinate action of the heart, and consequently facilitating the circulation through the capillaries[1].

[1] The great advantage which I have obtained from it in the treatment of amenorrhœa is a confirmation of the correctness of

As we cannot afford the heart any cessation from its labours, and as its mechanical function must be performed, even under the greatest disadvantages; when we on the one hand see it expend itself in violent and unnecessary efforts, or on the other see it sinking from want of vigour, we are obliged to act according to the exigency; in the first case to lower its tone by Digitalis and other remedies, and in the latter, to administer tonics and excitants. The benefit derivable from preparations of bark, has appeared to me manifest, when the heart has to struggle with mechanical difficulties, and is unable to perform its contractions with its accustomed rhythm. In a great majority of instances, irregularity, or intermission of the pulse, is to be taken as an indication of the heart being in a state of exhaustion; or we may infer this debility already to exist, when increased labour is imposed on it from either adherence or imperfection of the valves. Under these circumstances I give combinations of Digitalis and Quinine, with the combined effect of tranquillizing and invigorating the heart, as evinced

this explanation of its mode of action. In cases of menstrual obstruction with excessive action of the heart and yet cold extremities, I often, along with the hip bath, &c., use the following formula, at the time when that discharge is to be expected: ℞ Tinct. digit. ℈j. sp. amm. aromat. ℈iij. infus. secal. cornut. ℥viiss. ℳ. St. ℥j tertiis horis.

by the improvement of the pulse, and restoration of natural heat to the extremities.

The value of blood-letting depends much on the tone of the heart, at the time when it is performed. When there is accumulation in the veins and lungs with the heart in a struggling state, in consequence of over distention, a detraction of blood from the veins causes immediate relief; but in order that this relief may be permanent, or rather, in order that it may not be followed by dangerous sinking, it is requisite that the heart should have sufficient vigour to profit by the removal of the weight. Hence on the day when bleeding is performed, it it is usually expedient to prescribe a few stimulant draughts, composed of camphor mixture, with Hoffman's liquor or carbonate of ammonia. The good effect of bleeding in uncomplicated disease of the heart is, however, for the most part only temporary, and the practice of treating disease of the valves by frequent repetitions of it, cannot be too strongly reprobated.

When the urine does not coagulate, or merely throws up a slight froth on being boiled, then the dropsical swellings consequent on disease of the valves, are to be treated with diuretics, and one of the best is the old established compound of calomel, one grain; squill, two grains; and digitalis, one grain, to be taken thrice in the day. While taking

these pills the bowels are usually free twice or oftener daily, and it frequently becomes necessary to give a few grains of Dover's powder at night, to check the tendency to diarrhœa. The continuance of the digitalis must be regulated strictly according to the action of the heart as before mentioned; and if the bowels are too sensitive to bear the squill or calomel, they may be for a time superseded by mercurial pill, and extract of taraxacum. Diuretic drinks should likewise be taken, for example, solution of super tartrate of potash, mead or cider diluted with water.

When it is desirable to procure exhilaration with the least stimulation, either spruce beer or ginger beer may be taken.

Much of the success to be hoped from treatment will depend on the adjustment of diet to the circumstances of the case. Some of the French authors have recommended almost total abstinence, the *diæta aquea* of the ancients. If life could be maintained for some time without the action of the heart, it is evident, that great advantage would result from giving complete repose to the organ, but as this is impossible, and as we find that when some of the cavities of the heart are preternaturally distended, they resemble the bladder in the same state, and require a greater degree of vigour than ordinary, to enable them to propel their con-

tents, it follows that abstinence must not be carried on so far as to induce languor of the pulse, or coldness of the extremities.

In sudden states of depression, when the heart is over distended, and unable to propel its contents, and the patient appears at the point of death, I cannot too strongly insist on the benefit to be derived from the use of the more powerful stimulants. By a free access of fresh air to the patient's face, the rest of the body being kept warm, and the use of Geneva and water in spoonfuls frequently repeated, the heart, even in the most desperate forms of valvular disease, may be enabled to continue its labours, and thus may time be gained for the employment of more permanently effectual remedies.

CASES TO ILLUSTRATE DROPSY FROM VALVULAR DISEASE OF THE HEART.

(In the following, the details of treatment are abridged, unless where necessary to explain the symptoms.)

Case VII.—*Contraction of mitral opening—effusion into the right pleura—general œdema—death.*

Margaret Fagan, aged 30, married: the last child 10 years ago. Admitted 16th March 1829. Œdema

of face and legs; abdomen swelled and fluctuating; conjunctiva distended and watery; cough with bloody expectoration; is generally unable to lie down; lying on the left side in particular produces a sense of suffocation. No pulse can be felt at the wrists, it is perceptible at the axilla, natural in frequency, but very feeble; extremities cold and livid; lividity of lips: tenderness at left epigastrium; dull sound on percussion at lower part of right side; slight crepitation and bronchial sounds at right scapula; crepitus at base of left lung; dry bronchial sounds in superior part of same; has been subject to palpitations the last five years; present attack has lasted five weeks. 18th. Expectoration viscid and sanguineous; diarrhœa; fæces mixed with bloody mucus; left cheek more suffused than right; lies now on her back toward the right side. 20th. Continues sensible, and replies to questions; pulse imperceptible at the axilla, and scarcely to be felt in the subclavian; since her admission, the action of the heart cannot be felt; lips rather less livid; other symptoms as before. 21st. Died this morning.

Necroscopia.—Thorax: right cavity nearly filled with transparent straw-coloured serum; lung compressed towards the root, and upwards under the clavicle; lower lobe nearly severed from the rest, and adherent to the diaphragm; several bands of lymph intersecting each other held the lung in this posi-

tion; substance of the lung nearly hepatised in two or three parts; the remainder in less advanced stages of inflammation; left cavity, lung emphysematous at inferior angles and anteriorly, some inflammation commencing in the upper part of the lower lobe; bronchial tubes highly vascular; pericardium containing scarcely half an ounce of fluid. Heart: auricular portion much enlarged; left auricular ventricular opening closed so as barely to afford passage for a goosequill; left auricle hypertrophied, and in it an ovate mass formed of concentric layers of fibrine (as in aneurisms,) about the size of a walnut, and attached by a pedicle; the interior of this was opened, and found to contain a greyish white fluid. Abdomen: some fluid in the cavity of the peritonæum: in the uterus three small vascular tumors.

CASE VIII.—*Contraction of mitral opening; ascites; œdema; pulmonary apoplexy; pneumonia; death.*

Sophia M'Keon, aged 23, married; last child a year ago; admitted 9th of April, 1831; cough; dyspnœa—the latter greatly increased by lying on her back; severe pain in the left side; expectoration bloody; respiration almost inaudible with dull percussion at the base of the left lung posteriorly; bronchial sounds in various portions of both lungs;

abdomen swelled and fluctuating; œdema of legs; pulse 84; extremities cold; reports her cough to have lasted four years; has suffered from dyspnœa during the last four months, for which she was under medical treatment in Manchester: she was now directed to be bled, and to get pills of calomel and squill, and a mixture of decoction of seneka with Hoffman's liquor. 10th. Expectoration bloody; *bruit de soufflet* in the long sound of the heart: when the operation of bleeding was performed, the blood was at first projected from the vein, as if from an artery; a blister, and to continue the remedies. On the 16th she was bled, and on the following day the cough and dyspnœa were much improved; the expectoration was less sanguineous; crepitation heard in inferior part of right lung posteriorly; ptyalism; infusion of juniper with tartrate of potash. 19th. Pulse 108, scarcely perceptible; yesterday had a slight pain in the left breast, which is now enormously swelled and fluctuating, with an appearance of ecchymosis; œdema of face increased; respiration easy; debility much increased; awoke with screams several times during the night; draughts of camphor mixture, Hoffman's liquor, and carbonate of ammonia, every second hour; six ounces of wine. 20th. Died this morning.

Necroscopia.—Thorax: aortic valves thickened, and presenting semicircular edges; mitral valves

ossified, and adherent to each other; leaving an opening between the auricle and ventricle, less than the size of a sixpence, which could not be closed; left auricle greatly hypertrophied and dilated; both ventricles as well as the left auricle dilated; above a pint of brown serum in the pericardium; a small quantity of fluid in both pleural cavities; two large coagula of blood in the substance of the right lung towards its base, some smaller ones in the left.

CASE IX.—*Symptoms as in the two previous cases with œdema, and coagulable urine; relieved.*

William Behan, aged 20, shop porter; June 8th, 1836. Cough, especially at night, with frothy and salt expectoration; dyspnœa, soreness at the pit of the stomach, with a sense of tightness and weight; decubitus easiest in the prone posture. He cannot lie on his back, and generally sits up; dull sound on percussion beyond the præcordial limits; a loud *bruit de soufflet*, respiration over chest very feeble with a trace of crepitus, most distinct in the left side posteriorly; has had hæmoptysis; distress greatly aggravated by exercise; sleep disturbed by starts; urine frothing thickly when heated; appetite moderate; pulse 96. About 18 months ago his complaint commenced; he obtained relief in hospital, but a renewal of the symptoms came on

about three weeks ago; he has been much exposed to cold, and is addicted to drink. Mittant. sang. ℥xij. elect. jalap. ad effect. haust. eff. c. mist. camph. 10th. Hirud. viij. reg. cord.; cal. gr. iv. o. n.; rept. elect. 11th. Œdema declining; dyspnœa less; pulse 96; balsam copaib. gr. xxx. o. n. vesicat. reg. cordis. 16th. Swellings nearly gone; sleeps well; about two dejections daily; ℞. Ext. tarax. gr. iv.; digital. gr. i.; carb. ammon. gr. i. ℳ; ft. pil. ter in die sumend. 24th. Dismissed free from complaint.

Dropsy from disease of the lungs.—Those diseases which most interfere with the passage of the blood through the lungs are pneumonia in its advanced stages, and emphysema. In pneumonia the disease has hitherto been so generally treated by bleeding at the commencement, that the opportunities of seeing its advanced stages have been comparatively rare; but since what has been termed the tartar-emetic treatment has been introduced into this country, and the practice of bleeding has consequently been to some degree discouraged, it appears to me that the advanced stages and fatal terminations of pneumonia have been more frequent: and in this judgment I am confirmed by records on the large scale. Œdema following pneumonia is usually gradual in its approaches, being at

first confined to the ankles. When unaccompanied by coagulable urine, pills of calomel and squills repeated till the mouth is slightly affected, and occasionally superseded by draughts of a drachm of acetate of potass dissolved in an ounce of infusion of juniper, with the addition of compound spirit of juniper one drachm, and sweet spirit of nitre ten drops, to be taken thrice in the day; for hepatization of the lungs, friction over the hepatized portion, with equal parts of mercurial, iodine, and cantharides ointments; and for emphysema, in addition to the treatment above recommended, frictions with equal parts of tincture of capsicum and compound camphor liniment to the emphysematous regions are suitable adjuvants: and in both those diseases much depends on keeping the skin in a perspiring state by confinement to the bed, and by the administration of diaphoretics at night. It often happens under this treatment, that the œdema is removed, although the disease of the lungs may prove refractory, and even proceed towards a fatal termination; and such cases afford a good illustration of the impropriety of directing exclusive attention to dropsy, which is only a symptom, to the neglect of the disease which produces it. Emphysematous portions of the lungs often become œdematous when the general dropsy cannot be successfully combated; and this may be known, not only

by a dull sound on percussion succeeding the clear sound of emphysema, but also by a diminution of that peculiar respiration of emphysema which consists in the expirations being much longer than the inspirations; a peculiarity which I am surprised at not having seen described, as its importance merits, in works written professedly on the subject.

CASE X.—*General œdema—Pneumonia—Recovery.*

Catharine Walsh, aged 60, married; 8th March. Swellings of face and exterior of body; pulse 70: cough, with copious semi-viscid semi-transparent expectoration. Bronchitic sounds throughout both lungs; moist crepitus towards the base of the left; sleeps much more than usual, and complains of a noise in her head resembling the tide, accompanied with stupor. Duration of illness 12 weeks. Has been taking pills of calomel and digitalis, with electuary of jalap, during the last five days. Mitt. ex arteriâ temp. sang. ℥xij. ℞. Cal. digit. utriusque granum scillæ grana ij. m. ft. pil. tertiis horis sumenda. 9th. Noise in the head diminished; crepitus in left mammary region; cont. pil. 15th. Severe cough; pulse 96, strong, full; swellings gone. Mitt. sang. ℥xiv. cont. pil. 16th. Sanguineous expectoration this morning; blood not buffed. After this day the improvement was steady and rapid, and she was dismissed free from complaint.

CASE XI. — *General œdema—Bronchitis—Emphysema. The two former removed, and the last evidently reduced under treatment.*

John Kergan, aged 12. Feb. 28th. Severe cough; urgent dyspnœa; expirations twice as long as inspirations; palpitations excited by any exercise, however slight; pulse 128, weak; lips livid; face and extremities slightly œdematous; bronchitic sounds throughout the chest; emphysematous crepitus at the lower half of the left lung, with unnaturally clear sound on percussion; decubitus easiest on the left side, or leaning forwards. Duration of present symptoms nearly three months. Hirud. vj. laryngi; vesicat. sterno; pil. ipecac. et sod. ter in die. March 4th. Cough much better; pulse 80; ordered an expectorant mixture, and the following liniment to be rubbed over the emphysematous portion of the lung three times daily. ℞. Liniment. sapon. ℥ij. mist. camph. ℥j. olei terebinth. tinct. iodinii utriusque ℥ ss. ♏. 9th. Cough much less; lividity of lips and œdema gone; ordered a mixture of gum ammoniac; liniment to be continued. 13th. Emphysematous crepitus now heard only at the lower edge of the lungs, and the respiratory murmur is restored nearly throughout the lung; length of expirations to inspirations as three to two. Dismissed in a few days free from complaint.

This case is remarkable, from the removal of all

the symptoms of emphysema under the use of the above-mentioned liniment, which was rubbed in with exemplary diligence by a patient who happened to be in the same ward during his illness.

Debility is a cause of those dropsies which supervene in far advanced stages of several chronic diseases; as phthisis, chronic dysentery, cancer, &c.; and they appear in such cases to be produced by imperfect transmission of the blood through the heart and lungs. Dropsy of this kind, considered independently of the disease producing it, may be treated by the chalybeates much diluted, as in some of the mineral waters, or by alternate changes of various diuretics to be described under the head of ascites. The slight form of this kind of dropsy, which consists in swelling of the ankles coming on every evening, often yields to twenty drops of sweet spirit of nitre taken thrice daily, with occasional purgatives, as the following. ℞. Supertart. potass. ʒj. cambog. gr. i. camphor. gr. i. in tinct. zinzib. gutt. viij. solut. mannæ ℥ss. aquæ ℥i. ℳ. ft. haustus. When there is loss of appetite, it may frequently be revived by tar water, an aleglassfull taken thrice daily; which also produces a great increase of urine with increased heat in the extremities, but loses its efficacy generally at the end of a fortnight. It may, however, be repeatedly resumed at intervals with similar advantage.

PART IV.

ON DROPSIES DEPENDING ON TOPICAL AFFECTIONS.

1. *Ascites.*—When arising from diseased liver, it is usually sufficiently known from the history of the case, which shows the general tumefaction of the abdomen to have been preceded by pain, enlargement, induration, in the region of the liver, jaundice, ague, or some other affection, pointing out it as the original seat of disease. When the disease is most confined to the peritoneal surface, then a successful termination may be expected: but when the substance of the organ is indurated or tuberculated, then the cure is not only difficult, but in many cases impossible. The two first of the following cases are illustrative of ascites produced by inflammation of the peritoneal surface of the liver.

Case XII.

Mary Reilly, aged 32. Admitted to hospital Jan. 15. Abdomen tumid and fluctuating; œdema of face and legs; pain in the right hypochondrium

shooting to the spine, increased by pressure; skin yellow; headache; alvus tarda; no sleep; appetite remains; tongue clean; pulse 76, weak; cough, with nausea and diarrhœa, commenced five weeks ago. Complaint attributed to cold. Has been taking pills of blue pill, squill, and calomel. ℞. Pil. hyd. gr. iij. ipecac. gr. i. ter in die; admoveantur hirud. xij. regioni jecinoris; cream of tartar whey. 16th. Pain on pressure gone; yellowness diminished: pulse 72. ℞. Unguent. iodinii, ung. hyd. muriat. ammon. sing. ʒij. m. divide in chartulas viij. Infricetur una regioni jecinoris mane nocteque. 18th. Abdomen much less; general œdema nearly gone; pills and ointment to be continued; haust. terebinth. 21st. Has got a slight cold. Omitt. remedia; haust. efferv. 23d. Bowels lax; pulse 72: swellings gone. Dismissed free from complaint.

In the following, the same combination of ascites and hepatitis existed, and was removed under the treatment; but the head continued to labour under pain, which was not removed till after repeated applications of leeches to the Schneiderian membrane. This operation is best performed by passing silk through the tail end of the leech by a needle; and the operator can afterwards hold the thread, so as to restrain the leech from ascending too high.

CASE XIII.

Ellen May, aged 25. Admitted October 19. Abdomen tumid, with fluctuation; œdema of feet; pain in right hypochondrium, increased by lying on the opposite side; pain in head and neck, the former increased by coughing; bowels confined; catamenia regular. Haust. terebinth. statim; hirud. viij. temporib. haust. efferv. 20th. Head better; œdema less. ℞. Infus. juniperi. ℥viiss. sp. jun. comp. ℥ss. tart. potass. ℥i. ♏. sum. unciam tertiis horis; semicupium vesp. 24th. Œdema of legs gone; swelling of abdomen diminished; has taken electuary of jalap twice since last report, and with effect; pain of head, with dimness of vision. Hirud. ij. naribus. ℞. Tinct. seminum colchici. spirit junip. comp. utriusque ℥ss. infus. junip. ℥vj. tart. potass. ʒj. aquæ cinamom ℥j. ♏. sum. ℥j. tertiis horis. 25th. Head better; cont. mist. 27th. Camphorated senna mixture. 28th. Complains of frontal headache, with irritation of the conjunctiva as from sand; pain in right shoulder; a slight tension of the abdomen. Hirud. ij. naribus. ℞. Assafœtidæ. extr. aloes aquos. mass. pil. hyd. carb. ammon. singul. granum. ft. pilula; secundis horis sumenda. 29th. Head well; eyes better; deject. 2. cont. pil. semicup. vesp. 31st. Bowels confined; tongue loaded; pain in the head on moving. Mist. sennæ. camph. secundis

horis ad effectum. 1st. Nov. Rept. hirud. ij. naribus. semicup. emplast. ammon. cum hydrarg. lateri dextro. 2d. Head nearly free from pain. ℞. Sp. am. fœtid.; sp. ammon. aromat. utriusque ℥ss. ♏. sum. guttas. xxx. ter in die. 5th. Dismissed free from complaint.

The following six cases were connected with disease of the substance of the liver.

William Cuissett. Admitted Nov. 1828. Addicted to spirituous liquors: abdomen tumid and fluctuating, with occasional pain in the right hypochondrium. Before admission had been tapped, and had been under treatment. After admission he had two severe attacks of erysipelas, in the last of which he became comatose for two days. During the last fortnight delirium occasionally came on. The day before his death he was free from pain, and considered himself to be recovering; but on that night he was seized with a sudden and profuse vomiting of blood, and died early next morning.

NECROSCOPY.—Several quarts of serum in the peritoneal cavity; liver filled with spherical tubercles; a transparent globule (*quære* hydatid) of the same size and shape being among them; mucous membrane of stomach universally vascular; large quantities of blood and bloody mucus resembling red currant jelly in the stomach and throughout the intestinal tube extending to the rectum, towards

which the colour became darker; mucous surface of intestines healthy; peritoneal slightly opaque; no trace of inflammation at the place where tapping was performed. Head: increased quantity of water under the arachnoid and in the ventricles.

CASE XIV.—*Ascites with tuberculated liver—Effect of solution of corrosive muriate of mercury rubbed on the abdomen—Death apparently caused by opium.*

Sarah M'Donough, aged 46, married, without children. Admitted May 9, 1835. Abdomen swelled, with fluctuation; urine froths by heat; sometimes perspires; pulse 72, pungent; bowels free; dejections whitish. Complaint commenced with pain at scrobiculus cordis, and has lasted between three and four years. Was tapped three months ago. Hirud. x. reg. hepat. ℞. Muriat. hydrarg. corrosiv. grana iv. alcoholis ℥j. m. Infricetur ℥ss. abdomini ter in die. 17th. A slight erythema has been excited over the abdomen; a purging, with tenesmus, during the last four days. Omitt. frictio. ℞. Mist. cretæ ℥vj. ext. opii gr. ij. m. sum. ℥j. post dejectionem q. q.; decoction of logwood for drink. 19th. Diarrhœa has ceased. Repet. frictio. et mist. 20th. Diarrhœa returns. Cont. 25th. Vomiting and purging; tongue dry and white; pulse 120; abdomen rather softer;

soreness of gums, with slight ptyalism. Haust. efferv. cum aceti opii gutt. ij. omni hora ad levamen. Enema amyli cum tinct. opii gutt. xxx. statim. Hot salt to be applied to the abdomen. 26th. Diarrhœa continued last night; pulse 104; begs that she may be tapped. ℞. Ext. opii aquos grana ij. sp. æther. nitros. ʒij. aquæ lauro-cerasi ʒvj. mist. amygdal. ℥vij. ♏. sum. ℥j. omni hora et semissa; admov. hirud. iij. recto; sinapisma abdomini. 27th. Diarrhœa has ceased, without taking the mixture; leeches bled well; urine increased; sinapism. abdom. cont. mixt. 28th. Alvus tarda; pulse 84. ℞. Crys. tart. ʒij. rhei gr. xiv. mist. camph. ℥iss. ♏. ft. haust. stat. sumend. A pint of spruce beer. 29th. Dej. 3. hirud. xij. abdomini; sinapisma imo abdomini. ℞. Calomel gr. j. ext. tarax. gr. vj. ♏. ft. pil. ij. ter in die sumendæ. 30th. Abdomen softer. Rep. hirud. cont. cæt. June 1st. Pulse 108; abdomen appears to diminish; uneasiness in the bowels. ℞. Sp. fœnicul. dulc. gutt. xij. sp. æth. nit. ʒj. mist. cretæ. ℥vss. syr. aurant. ʒiij. m. sum. ℥j. post pil. 4th. Complained of strangury, for which the usual remedies were ordered. The next day relief was obtained. The swelling of the abdomen continued progressively to decrease, when, after a few days, death suddenly took place in the night, and it was discovered that she had taken an unknown quantity

of laudanum, a bottle of it nearly emptied having been found under her pillow.

NECROSCOPIA.—Fluid in the peritoneum; liver tuberculated; kidneys slightly interspersed with granular structure; one ovary distended with fluid to the size of a large cocoa nut; the sac strong and thick.

Before I relate some cases of ascites successfully treated, I beg to claim the reader's attention to what has been stated with respect to this form of disease in combination with coagulable urine (See page 57.). The same observations apply to ascites with uncoagulable urine. As the collection of fluid in the peritoneum is not a fatal occurrence, the patient should be allowed to live with it, if it appears, after a fair trial of remedies, that we are unable to remove it. Hence I am constrained to protest against the practice so commonly followed, of attacking every case of ascites with reiterated courses of mercury, and other remedies equally heroic, until either absorption of the fluid or death shall ensue. By stopping active remedies for a time, by not continuing the use of any one diuretic as soon as it has ceased to produce an increased secretion, or has been ascertained to be inefficient, and above all by making frequent changes of them, I find the ascites gradually to disappear; while at

the same time the general health is completely restored, and this even when the case is undoubtedly connected with deep-seated disease of the liver. It is remarkable, that, in Cœlius Aurelianus, this mode of proceeding is to be found applied to the treatment of several chronic diseases; his object being to change the mode of action on which disease depends, as we learn from the courses or cycles of remedies, which he describes under the name *re-corporative* (Chron. lib. I. c. i.), or alterative and *resumptive*, or tonic. For example: in cephalæa he commences with a *resumptive cycle*. On the first day the patient is either to abstain entirely from food, or to use the smallest quantity. On the second he is to take exercise, to be anointed, and to take a little either of vegetables, fish, or small birds. This to continue two days. Then he adds to the amount of food; after three days he permits hares and kid. By degrees increasing the allowance of wine he comes to the termination of this cycle; afterwards the re-corporative succeeds. On the first day, abstinence; on the second, the bath, carriage exercise, inunction; one-third of the patient's ordinary allowance of bread, acidulous wine, mustard, olives, capers, salted gruel. From the third day he adds to the quantity of food and drink; and afterwards proceeds from fish to birds, and from them to the flesh of wild animals, joining to these external appli-

cations of various kinds. At the termination of this cycle he gave emetics of mustard, or of vinegar of squill, and aided the vomiting by warm water. In like manner the patient resumed the same course anew. What was done by Cœlius in the article of diet, I have endeavoured to accomplish also in respect to medicines. In the diseases of the liver, connected with ascites, having frequently observed amendment to follow the occurrence of copious spontaneous hæmorrhage from the bowels, I determined, in some cases, to carry into effect the mode of producing this hæmorrhage, which I described in the third volume of the Dublin Journal. Two or three leeches are transfixed with a needle, and attached by strong silk as described in figure 3. The silk threads having been placed in the grooves of the instrument, the leeches are introduced along with it into the rectum above the sphincters. They usually remain about a quarter of an hour, and at the end of that time may be pulled out by the extremities of the silk, which remain outside. The hæmorrhage subsequent to their application has not in any instance lasted so long, as to render it necessary to adopt any measures to stop it, but in case of such an occurrence, an enema of solution of nitrate of silver would probably be sufficient.

External applications are of the greatest importance in this disease. Mr. Hunter said that an in-

flamed surface was a bad absorbing one. The contrary appears to be the fact: when mercurial ointment is applied to the skin in erysipelas, it produces pytalism with singular rapidity; and wherever blisters have been applied, there the ecchymosis of leech-bites disappears much sooner than in other parts of the skin, thus showing increased activity of the absorbents. Hence in order to promote the general effect of mercurial or iodine ointments on the surface of the abdomen, it is well to add some cantharides, or camphor, or to apply a sinapism to the skin previously to their use. As soon as mercury has produced soreness of the mouth, it should be suspended, as a severe salivation is usually found to interrupt the secretion from the kidneys; but its moderate action may be kept up by small doses of blue pill frequently repeated for some time, during which counter-irritants over the abdomen are to be assiduously applied, except when replaced by fomentations, which have been known in the hands of ignorant persons to have sometimes accomplished a cure [1], even when unassisted by other means.

[1] I have in my possession a MSS. account of the cases of two gentlemen, well known in the King's County, where they resided; one far advanced in life, who, after the treatment of the faculty had proved ineffectual, were both cured under the care of an old woman, by the following application: a quart of snails pounded, two handfuls of bog liver-wort, the latter boiled and thickened

In the treatment of ascites more than any other form of dropsy, the repeated use of purgatives is required. These should be varied according as they act on different portions of the intestinal tube. I here subjoin some of the most suitable formulæ with the number of dejections which they produce, as averaged from a great number of observations:

	Average number of motions.	Number of hours before commencement of operation.	Observations.
PIL. CROTON. COMP. ℞. Ext. Al. aquos. ʒi. Rhei. ℈ii. Olei Croton. gutt. vj. M. Ft. pil. xxiv.—Dose 2.	4	3	Full motions in all: nausea in $\frac{1}{3}$.
PIL. ELATERII COMP. ℞ Elaterii grana iv. Scammonii ℈i. Ext. Al. aquos ℈ij. Ext. Hyos. ℈iss. M. Ft. pil. xxiv.—Dose 2.	3	2	Nausca or vomiting in all.
SOLUTIO CAMBOG. ALKAL. ℞ Cambogiæ ʒss. solve in aq. potass. caust. ℥ss. Dose—Thirty drops in a wine glassfull of water.	3	1	Full motions requiring repetition in $\frac{1}{2}$; total failure in $\frac{1}{8}$; nausea and tormina in $\frac{1}{3}$.

with barley meal, and then mixed up with the former; to be applied over the navel every night, and secured with a tight bandage. After this poultice was taken off, a tight bandage was constantly worn for some time.

	Average number of motions.	Number of hours before commencement of operation.	Observations.
HAUSTUS CAMBOGIÆ. ℞. Supertart. potass. ʒij. Cambog. gr. i. Mannæ ℥ss. Camphoræ gr. i. in. Tinct. Zinzib. ʒi. solut. Aquæ ℥i. M.	2	3	Nausea or tormina in almost all; failure in ½.
MISTURA SENNÆ CAMPH. ℞ Infus. Sennæ comp. ℥vij. Sulp. magnes. ℥j. Tinct. jalap. ʒvj. Tere cum camphoræ gr. viij. M. Dose ℥i.	5	2½	Nausea in ¼; repeated doses required in ⅓; total failure in $\frac{1}{7}$
HAUSTUS OLEOSUS. ℞ Olei. Ricini. ℥ss. Tinct. Sennæ comp. ʒij. Aq. menth. pip. ʒvj. M.	3	1½	Nausea in ⅔ failure in $\frac{1}{10}$.
HAUSTUS TEREBINTH. Additur priori Olei. Terib. ʒiij. et omitt. Tinct. Sennæ.	4	2	Nausea or vomiting in ⅓; motions full, rarely griping; failure in $\frac{1}{14}$.
PULV. JALAPÆ COMP. Dose ʒi.	2	3	Tormina in ½; repeated doses required in ⅕.

CASE XV.

Robert Vaughan, aged 19. Admitted November

9th, 1835. Abdomen greatly swelled and fluctuating; œdema of legs; emaciation; pulse 96. Loss of voice; cough; skin dry; duration of complaint nine weeks. Has indulged largely in the use of ardent spirits. Pulv. jalap. comp. ʒi. statim. 5th. Bal. tep. vesp. ℞. Pulv. Jacob. ver. gr. viij. calomel gr. iv. ɱ. h. s. sumendus. Haust. terebinth. c. m. 6th. Œdema of legs diminished. Epistaxis yesterday. ℞. ung. hydrarg. ʒij. ung. canthar. ʒi. ung. iodinii; ʒiij. mur. ammon. ℥ss. ɱ. Divide in chartulas viij. Infricetur una regioni jecinoris mane nocteque. Rep. pulv. h. s. semicupium. vesp. 10th. Abdomen decreasing in size; enlarged and indurated liver can now be distinctly felt. Rep. pulv. haust. tereb. c. m. cont. unguent. 11th. Epistaxis has again occurred; urine and drink reported to be equal, being three pints each. Pulv. jal. comp. ʒi. c. m. hirud. xij. jecin. cont. ung. 17th. Hirud. iij. recto. 18th. Bleeding from the rectum continued about four hours; pulv. jal. c. ʒi. cont. unguent. 19th. Rep. hirud. recto. 24th. Gamboge draught; cont. ung. 29th. Abdomen diminishing. Rep. hirud. recto; cont. ung. Dec. 3d. Rep. haust. cambog. 6th. Rep. hirud. recto; infric. ol. croton. gutt. x. c. m. 7th. Croton oil produced a bright erythema on the skin about six hours after its first application. 15th. Abdomen steadily diminishing; hirud. iij. recto; calomel gr. iij. h. s. haust. cambogiæ c.

m. 17th. Rep. hirud. ℞. calomel gr. i. ext. tarax. gr. iv. m. ft. pil. ter die sumend. 22nd. Cont. pil. rep. hirud. 26th. Abdomen continues to diminish; pulv. jal. comp. ʒi. cont. pil. 30th. Haust. terebinth. 31st. Pulv. jal. comp. Jan. 2nd. Ptyalism; rep. hirud. In a few days the abdomen being reduced to the natural standard, and the size of the liver much diminished, he was dismissed free from complaint.

Case XVI.

Mary Hyland, aged 69, a widow. Admitted 9th of September, 1830. Abdomen swelled and fluctuating. A hard tumour is distinctly felt in the hepatic region; pain of right shoulder; pulse 84. Œdema of left leg occasionally; urine scanty, not coagulating by heat; some perspiration; duration of swelling of abdomen one month. Had pain in the right side three months ago, for which she took various remedies with the effect of relieving the pain. Elect. jalap. ad effect. 10th. Hirud. iv. recto; solution of supertart. of potass for drink; ℞. infus. junip. ℥vj. aceti. scill. ʒij. tart. potass ℥ss. aquæ cinnam. ℥iss. syr. simp. ℥ss. m; sum. ℥i. tertiis horis. semicup. vesp. 12th. Abdomen softer; cal. gr. iij. omni nocte; cont. cætera. 14th. ℞. elaterii granum. conserv. ros. q. v. m. ft. pil. iv. sum. unam quartis horis ad effectum. 15th. Eight de-

jections after two pills. ℞. scill. gr. iij. cal. gr. i. ft. pil. ter in die sumend. 16th. Haust. tereb. cont. pill. 18th. Vesicat. ij. parva abdomini; rep. haust. tereb. cont. pill. 20th. Abdomen less; rep. haust. tereb. cont. pill. 23rd. ℞. infus. juniper. ℥vj. tart. potass. ʒi. sp. nitri dulcis ʒij. st. ℥i. omni mane; cont. pill. 27th. Urine increased; abdomen diminished. Haust. tereb. cont. cœtera. Oct. 5th. Ptyalism; abdomen much reduced, nearly natural. Some tumefaction of liver still perceptible. Omitt. pil. cont. mist. infric. liniment. volat. abdomini quotidie. After a few days of steadily progressive improvement she was dismissed.

Case XVII.

Margaret Reilly, aged 32. Admitted to Mercer's Hospital, 15th of January, 1835. Abdomen swollen and fluctuating. Pain in right hypochondrium increased on pressure, and shooting to the spine; œdema of face; jaundice; urine unaffected by heat; pain of head; bowels confined; appetite good; tongue natural; pulse 76, weak. The abdomen began to swell about five weeks ago, at which time she was attacked with nausea and diarrhœa; she attributes it to cold; has been taking blue pill, squill, and calomel. ℞. Mass. pil. hyd. gr. iij. ipecac. gr. i. ft. pil. ter in die sumend.; admov. hirud. xij. regioni je-

cinoris; cream of tartar whey for drink. 16th. Tenderness on pressure removed; pulse 72. Yellowness diminished; ℞. unguent; iodinii. ung. hydrarg. muriat. ammon. singul. ʒij. ℳ; divide in chart. viij. Infric. una mane nocteque; cont. pil. 18th. General œdema nearly gone; abdomen much less. 19th. Haust. tereb. cont. cætera. 21st. Has got a cold, with the usual febrile symptoms. ℞. carb. ammon. ʒi. succi. limon. q. s. ad. saturand. adde aq. menth. pip. ℥iij. syr. aurant. ℥i. sp. ammon. aromat. ʒij. ℳ; sum. coch. iij. ampl. secundis horis; omitt. cætera. 23rd. Febrile symptoms have ceased; swellings completely removed. Dismissed free from complaint.

CASE XVIII.

William Parnel, aged 40, proprietor of an eating house; of most intemperate habits. Admitted to Mercers' Hospital, 14th of May, 1836. Abdomen tumid, fluctuating; œdema of legs; jaundice; feels a sensation of a weight falling from the right hypochondrium, which prevents him from lying on the left side. Urine loaded as in jaundice; dejections clay-coloured; fulness in right hypochondrium, and dull percussion extending nearly half way up the right side of thorax; pulse 116. Anorexia; thirst; tongue dry in the middle; great debility. Illness is reported to have commenced about three months ago, with hæmorrhage from the nose, on which oc-

casion he is stated to have lost about five quarts of blood. Cucurbit. regioni. jecinoris et mittant. sang. ℥x. mist. sennæ camph. ad effect. limonade. 16th. Rep. cucurbit. et mitt. sang. ℥xij. Sum. meridie et vesperi pulv. ex calomel. grana ij. pulv. Jacobi veri gr. vj. ℞. 17th. Hirud. x. regioni jecin. cont. pulv. haust. efferv. secundis horis. 19th. Blood passed with the last three dejections, not mixed, and unaccompanied by pain; pulse 96, pungent. Tumefaction of abdomen diminishing. 20th. Hæmorrhage from the bowels continues. ℞. ung. hydrarg. ʒj. muriat. ammon. gr. viij. camphoræ gr. ij. ℞. Infricetur abdomini mane nocteque; cont. pulv. et haust. efferv. 23d. Some blood with each dejection; jaundice diminishing; omitt. pulv. cont. cætera. 26th. Urine of a deep madeira colour without sediment, not coagulating, (as at first,) but frothing to heat; three dejections daily, of a better colour; pulse 96. Abdomen to be sponged with the nitro-muriatic solution twice in the day; cont. unguent.; a pill of elaterium; a bottle of spruce beer daily; omitt. cætera. 30th. A great operation from the pill; mouth sore; ptyalism. Had a perspiration the night before the last. Mist. quininæ ℥ss. ter in die pulv. Doveri gr. viij. h. s. (These were ordered to hold in check the ptyalism which appeared likely to become excessive.) Decoct. catechu pro gargarismate. June 2d. No swelling now except in the abdomen, which is much diminished.

℞. Liniment. camph. comp. tinct. capsici utriusque ℥ij. liquor muriat. calcis, tinct. digital. utriusque ℥ss. ♏. Infricetur abdomini ℥ss. ter in die. ℞. Infusi pyrolæ umbellatæ ℥viij. infus. tarax. ℥iij. acetat. potass. ℥j. ♏. sum. ℥jss. ter in die. 8th. Swelling of abdomen steadily diminishing; mouth very sore. Haust. terebinth. garg. boracis; cont. cætera. 13th. Improving in every respect; abdomen nearly natural: pulse 90; urine increased; mouth still sore. Elect. sulphur. coch. min. mane et meridie. The medicines of the 2d June were resumed for a few days, and he was dismissed on the 23d free from complaint.

Case XIX.

Thomas Connor, aged 42, afforded a remarkable proof of the advantage of hæmorrhage from the portal system. He was admitted into hospital the 26th of April, with ascites and general œdema. The enlarged liver could be felt extending over the greater part of the abdomen. The urine coagulated by heat. The treatment consisted chiefly in the application of leeches and cupping over the region of the liver; thirty drops of balsam of copaiba thrice daily; rubefacient frictions, with frequently repeated elaterium pills. Although the swelling of the abdomen declined, and the coagulation of the urine was less, still the progress towards recovery was very slow till the 2d of June, when a vomiting

of blood to a large amount took place. After this the diminution of the liver and of the fluid in the abdomen went on rapidly without any change of treatment, and he was soon discharged free from complaint.

A singular case occurred to me, which showed that the pain at the tip of the right shoulder, which is so common an attendant on affections of the liver, belongs to irritations at its posterior and diaphragmatic portions rather than to those of its anterior. A young woman had repeated abscesses of the liver. When they proceeded inwards (as known by their bursting into the stomach), then for some time previously there was the pain at the shoulder; but this did not come on when they protruded outwards. She experienced the same combination of symptoms at several repetitions of her disease.

Ascites produced by peritonitis, independently of disease of the liver, is usually easy of cure if not of long duration. In the following case it was combined with pleuritic effusions; and it will be perceived that these also yielded to the ordinary treatment.

Case XX.

Patrick Connolly, aged 50, a porter (deprived of one of his legs), admitted 27th October, 1831. Abdomen swollen and fluctuating; pain in left hypochondrium preventing him from lying, except on

his right side or back; some cough and dyspnœa on lying down, especially on the left side; left foot œdematous; urine much diminished, uncoagulable; pulse 80; during the last five weeks he is stated to have passed only about two wineglassfulls of a deep colour twice daily; puerile respiration under left clavicle; respiration quite inaudible, and percussion dull in the lower half of thorax at both sides; Duration of illness three months. Commenced with pain in abdomen in left hypochondriac region. ℞. Infus. junip. ℥vi. sp. junip. comp. ℥ss. aq. menth. ℥iss. tart. potass. ℥j. sum. ℥j. ter in die; pil. cal. et scill. ter in die. 29th. Three dejections daily; foot less swelled; urine much increased. 31st. Mittant. sang. ℥xij. cont. pil. et mist. Nov. 1. Blood not buffed; dyspnœa relieved; perstet. 3d. Ptyalism; left decubitus easier; swelling of abdomen rather diminishing; tormina; mist. mag. ter in die; omitt. cætera. 8th. Dyspnœa greatly abated; dull percussion as before; abdomen not much less than at first; rept. pil. cal. et scill. nocte; mist. junip. mane et meridie. 16th. Alvus tarda. ℞. Tart. potass. tinct. jalap: utriusque ʒij. aq. menth. ℥j. m. ft. haust. statim sumendus. 17th. No effect from draught; haust. terebinth. 18th. Bowels freed; cont. pil. et mist. 27th. Lies in every direction without inconvenience; some portions of thorax at first dull on percussion, now clear; abdomen greatly reduced, nearly natural; pulse 76; cont. pil. et

mist. In a few days he was dismissed free from swellings, and in the enjoyment of his usual health.

Hydrothorax is rather an unfrequent occurrence at the early periods of general dropsy produced by the causes already enumerated. In those cases it is most usual towards the approach of death, or at least when the forces of the circulation are very much sunk. In several general dropsies, in which la ge quantities of fluid were found in the pleural cavities, I was certain, from repeated examination by percussion, that the effusion had not taken place till within a few days, or sometimes a few hours, before the fatal event; and in some instances it appeared that it must have occurred either during the last struggle, or subsequently to the death of the patient.

After pleurisy, however, hydrothorax occurs very commonly, either when the former has not been met by proper treatment, or has taken place in enfeebled subjects, or under circumstances causing relapses or aggravations of the inflammation. In some instances of even slight pleuritic seizures an effusion of serum rapidly takes place, and the death of the patient almost immediately ensues.

In a patient who lately came under my observation in Mercers' Hospital, of spare habit, greatly debilitated and emaciated from long-continued irritation of the stomach; there was no affection of the

chest whatever; until one afternoon, when a cold breeze from an open door produced a pain in the left side, with slight cough, for which a blister and other applications were resorted to. His breathing continued unaffected till the following night, when his companions observed his rest to be disturbed, and he died early the next morning. On examination, the left pleural cavity was found filled with serum and masses of lymph of a gelatinous consistence, the lung being compressed towards its root against the spine. Death in this case was to be attributed to the suddenness of the occurrence rather than to its importance. When effusions of this kind take place gradually, the respiratory system is able to accommodate itself to the change, and the patient may endure it for a long time, even when it cannot be removed. As an illustration, I subjoin the following case.

Case XXI.

John Fea, a servant, aged 47, admitted August 14, 1831. Pain in the back, shoulders, left side and head, aggravated by heat; a cough which occasions pain in the left side; dyspnœa, and a dragging pain in the left side caused by lying on the right; occasional rigors; pulse 76, weak; percussion dull on left side, both anteriorly and posteriorly; respiration puerile under right clavicle, and inaudible in left side. Complaint commenced with pain and

cough about two months ago. Attributes it to cold contracted after being heated by a long walk. Hirud. xx. lat. sinist. pil. cal. et scill. tertiis horis; vesicat. axillæ sinist. potus tart. 17th. Severe pain in back last night. Mitt. sang. ℥x. cont. cætera. 18th. Blood not buffed; pulse 84; lies down with more ease, but not on his left side or back; cont. 21st. Hirud. xiv. lateri dolent. 22d. Cannot lie on left side or back; feeble respiration under the left clavicle; ptyalism. ℞. Infus. junip. ℥vj. nitrat. potass. ℥ss. muc. g. Arab. tinct. scill. syrup. zinzib. singul. ʒvj. ♏; sum. ℥j. ter in die; vesicat. lat. sinist. 23rd. Pain in left side gone; cont. mist. omitt. pil. 26th. No motion of the ribs on the left side takes place in respiration; no respiration to be heard on that side; percussion in the same universally dull; respiration in the right side puerile; pulse 88; severe pain at night along the spine; rept. venæsectio ad ℥x. pil. cal. et scill. mane; cont. mist. Sept. 13th. Hirud. xx. axillæ; cont. cætera. 14th. Pain abated; vesicat. axillæ; cont. pil. 17th. Tenesmus came on since last report; the pills were discontinued; moans at night; pain at lower part of left side; some respiration heard towards the spine, but only bronchial (i. e. in the larger air tubes); other symptoms as before. Pil. cal. et opii h. s. m. sen. ad effect; hirud. xvj. reg. cord. 20th. Feels better; cont. pil. mist. junip, &c. 21st. Appears to have got cold; sonorous

râle throughout right lung; severe dyspnœa; mist. cardiac. secundis horis. vesicat. sterno. 22d. Respiration easier; pil. cal. et opii statim et vesp. cont. mist. cardiac. cream of tartar whey. 27th. Since last report the respiration has been much relieved; pulse 88; lies on his back; ribs of left side not at all moved in respiration, those of the right side excessively so; percussion at left side universally dull; sleeps well at night; tongue coated; appetite gone; some diarrhœa the last three days. 28th. Died last night.

NECROSCOPIA.—Left cavity of the pleura distended with serum containing shreds of organised lymph; lung thrust in towards its root, one adhesion alone remaining at the apex; pleura opaque: some red spots of vascularity on the diaphragm; lung nearly solid, sinking in water; heart thrust under the sternum; about two ounces of serum in the pericardium, and a large white spot on the surface of the heart, otherwise healthy; right pleural cavity nearly free from serum, with a few slight adhesions; right lung healthy.

In the above case the patient could not lie on the affected side, a circumstance to be attributed to the active inflammation of the diaphragmatic pleura of that side. Otherwise the general rule in pleurisy is, that in the first stage of pleurisy the patient lies on the opposite side; but when effusion has taken place to any considerable extent, then he lies

on the affected side in order to keep the weight from the great vessels and opposite lung. I recollect to have met with only two cases in which there was no pain, and yet the patient could lie with comfort on the opposite side. In both, the fluid effused was confined to distinct cells of different sizes by strong adhesions, and was thus prevented from pressing on the great vessels at the root of the lung.

Effusion into the pericardium frequently occurs when the agony of death has been of long duration, and is thus often found to the extent of two or three ounces when no evidence of its existence had appeared during life. When of greater extent, and recognisable by symptoms, it is either the result of pericarditis, or connected with general dropsy; and in this latter case is not usual, except when there has been disease of the valves. Sometimes it occurs in renal dropsy. With respect to its diagnostic symptoms, most of them are seen in the following case combined with those of open aortic valves.

Case XXII.

John Lyons, aged 24, a tailor from Castlebar, admitted March 8th, 1833. Violent action of the heart; pulse 120, sharp, full; left decubitus easiest; right decubitus accompanied by a sensation of a weight falling from the direction of the heart; no pain produced by coughing; bounding of arteries;

dull percussion to a considerable extent over cardiac region; an undulatory motion synchronous with the pulsation perceived there in the intervals of the ribs, and by pressure with the finger it is ascertained to be caused by the fluctuation of a fluid. Duration of present symptoms six weeks. Appears to have been caused by cold when suddenly getting up in a heat. Remembers from an early period to have been subject to palpitations. Mittant. sang. ℥xiv. ℞. Calomel granum; tart. ant. gr. ¼. digitalis granum; ext. gentian q. s. ft. pil. ter in die sumend. 9th. Pulse 96, softer; tenderness on pressure of the epigastrium below the region of the heart; rep. venæsectio. 10th. Cucurbit. reg. cord. mitt. sang. ℥xiv.. 11th. Sleep improved and refreshing; pulse 100, still pungent; perstet. 12th. Nausea, and a sense of heat in the stomach; palpitations and irregularity of pulse when lying on right side; omitt. pil.; pil. cal. et opii meridie et vesp. tinct. digital. gutt. x. ter in die; cream of tartar lemonade. 16th. Ptyalism; pulse 116; omitt. pil. haust. efferv. c. spir. nit. dulc. gutt. vj. secundis horis; pediluvium. 18th. Pulse 120; mist. ros. cathart. ℞. Tinct. digital. gutt. lxxx. sp. nitri dulcis ʒij. mucil. gum. Arab. ℥iv. aquæ ℥iij. syrupi ʒvj. ℳ; sum. ℥j. ter in die. 20th. Pulse 120, very strong and sharp; vesicat. reg. cord. cont. mist. 21st. Soreness of mouth preventing sleep; in other respects as before; hirud. vi. infra maxillam; aceti

opii gutt. xx. in haust. efferv. h. s. cont. mist. 22d. Pulse 94, less full; slept better; soreness of mouth less. 26th. Pain shooting from the sternum towards the left lumbar region; perstet. 29th. Pil. cal. et scill. h. s. cont. mist. 30th. Delirium during the night, with fits of insensibility; is unable to speak, but seems in pain; vomiting and diarrhœa; mittant. ex arteriâ temp. sang. ℥x. ℞. Mist. card. ℥vj. tinc^t. opii. ʒj. aq menth. ℥ij. ♏. ℥j. secundis horis; vesicat. scrob. cordis. 31st. Pulse 120, sharp but compressible; vomiting has ceased; diarrhœa continues; does not speak, but appears in pain; head not hot; lies on both sides and on his back; abrad. capill. vesicat. nuch. cont. mist. April 1st. Died last night.

Necroscopia.—Above a pint of clear serum in the pericardium; serous membrane covering the heart towards its apex opaque; aortic valves thickened, so as to cause an open space in their central point of meeting; mitral valves thickened, yet not so as to contract the opening, or to impede their function; left ventricle much hypertrophied; at the upper surface of the brain several spots of ecchymosis, and considerable vascularity; more fluid than usual in the ventricles; no morbid appearances observed in any other part.

The symptoms which occurred in all my cases of effusion into the pericardium were, inability to lie with ease on the right side; starts during sleep; ful-

ness of the epigastrium under the pericardium; dull percussion over the lower part of the cardiac region. The above symptoms always preceded, and often accompanied, by great frequency and pungency of pulse, with pain in the region of the heart; the latter not much increased by full inspiration as in pleurisy, but much aggravated by exercise. In several, the fluctuation of the fluid in the pericardium was visible through the integument, and by an experienced finger could be ascertained to be fluid, and not the movement of an enlarged heart; and in two instances the patients described a sensation as if a foreign body was underneath them when they lay on the left side *.

This disease is generally tedious, and often refractory to treatment. The best results in my experience were obtained from pills of calomel and digitalis, of each a grain, and extract of the acetum colchici two grains, to be taken thrice daily, along with frequent leeching and blistering over the region of the heart. When the heart's action was marked by unusual strength and violence, quarter-grain doses of tartar emetic were combined with calomel. In all cases the question of general bleeding was decided by the strength of the pulse, and

* Here it is not intended to give a diagnosis of pericarditis so much as of hydrops pericardii. For an account of the sound produced when shreds of lymph are formed in the pericardium, see Dr. Will. Stokes's paper in the Dublin Medical Journal.

the effects of it, as before observed. Purgatives, although often necessary, yet when used so as to produce irritation of the stomach and flatulence in the colon, cause great distress. Under those circumstances a draught of a quarter of a grain of watery extract of opium, and twelve drops of aromatic spirit of ammonia in camphor mixture, afford much relief. In general it is advisable, as much as possible, to withhold opiates for the procurement of sleep, as they mask the real state of the patient; and until the excitement of the circulation has been to some degree lowered, produce only a stupor with uneasy dreams prejudicial both to comfort and the favourable progress of the case. When however in this stage sleep has been much interrupted, it may often be procured without any disadvantage by either two grain doses of Dover's powder every three hours, or one-eighth of a grain of acetate of morphine at the same interval, beginning in the afternoon, and aided by the pediluvium at night.

HYDROCEPHALUS.—This disease, which is still best understood by the public under the name *water on the brain*, is yet so little of a dropsical nature, that in many cases no fluid whatever, but on the contrary an unusual dryness, is found in the ventricles. A late eminent practitioner of this city, who was well aware of this fact, was known, when attending *post mortem* examinations in this disease in presence of the patient's friends, to keep a sponge filled with

water concealed in the palm of his hand, in order to afford a ready supply whenever the ventricles were empty. Nor is this error of believing the disease to consist in a collection of fluid confined to the non-medical portion of the public. Much light has been diffused on the subject since the publication of Dr. Quin's work, and we have many excellent practical treatises on it; but the confusion which still prevails as to its pathology and peculiar symptoms induces me to take this opportunity of stating my views on the subject.

There are three seats of disease within the cranium, which, although often simultaneously affected, and so giving rise to numerous complications, yet by comparison of individual cases may be proved to produce the following symptoms.

1st. The membranes of the brain, when affected (as in arachnitis), are the seat of pain more or less intense, which is increased by pressure, like that of all inflamed serous membranes, as may be tried by coughing or sneezing. When inflammation has proceeded to a certain extent, then so large a quantity of fluid may be effused within the cranial cavity that the space occupied by the blood-vessels is so much curtailed that the necessary circulation cannot be carried on, and coma ensues.

2dly. The cortical structure, when inflamed, causes delirium. The frequency of delirium in arachnitis arises from the proximity of the mem-

branes to the cortical structure, in consequence of which excitement of the former is readily extended to the latter. For the changes of the cortical structure which have been observed in mental diseases, see the work of Dr. Foville.

3dly. The medullary structure is the seat of paralysis, when either pressure or disorganization of it has taken place: when not thus affected, but irritated, then convulsions are the result.

Those principles will be found to furnish a clue, by which we may diagnose most affections of the head, and also satisfactorily explain the apparent exceptions.

Hydrocephalus, although not dropsy of the brain, as held by the older writers, nor phrenitis, yet is different from arachnitis, with which the moderns have endeavoured to identify it. It is to be distinguished from arachnitis first by its seat, which is not the membranes, but the substance of the brain; and secondly, by its symptoms. In it the septum lucidum is soft, so as not to be capable of being demonstrated, while the fornix and commissures are of the consistence of thick cream. The strabismus which occurs towards its termination belongs to no other disease of the brain, and appears to arise from the disorganization now mentioned, by which the connexion between the hemispheres is dissolved. Again, the disease forms in a gradual and often unperceived manner, such as might be judged to

belong to slow disorganization of the brain; and the febrile attack, for which medical assistance is usually too late invoked, is only its termination. This, it is true, is generally attended with arachnitis, and consequent serous effusion; but the judgment as to the mode of its formation and probable fatal tendency is always to be formed from the existence of the previous symptoms.

The following case is subjoined as a specimen of this disease, presenting its most important features.

Case XXIII.

Master A., April 6th, 1833. Is in a state of insensibility; strabismus; eyes partially closed; conjunctiva of right eye suffused; pupils dilated. On exposure to light, the pupil of the right eye contracts, while that of the left continues dilated. Face appears drawn towards the left side; moanings frequent and half suppressed, resembling those of a person labouring under night-mare; seems slightly conscious when the head or any part of the body is touched; and when a moxa was applied, the motion of the hands and convulsive curl of the mouth to the left side indicated a sense of pain; pulse 120, weak; bowels confined; occasional hiccup; an accumulation of froth around the mouth.

Is reported to have been ailing the last three weeks, his complaint having been considered as a bilious fever. During nearly four months pre-

viously, he has been observed to be more reserved than usual. He absented himself from his accustomed amusements, and confined himself within doors. He constantly kept near the fire. He also used to complain of a pain in his right temple, and of his sleep being disturbed by frightful dreams. While reading some time ago, he suddenly started up and said that something like a film had come over his eyes. Insensibility came on unexpectedly yesterday. Leeches, blisters, and moxas, have been applied, and he has taken forty grains of calomel; enema statim; lotio frigida temporibus; cal. gr. iv. quartis horis. 7th. Copious dark coloured dejections passed involuntarily; sumt. cyanureti hydrar. grs. omni hora. ad 6 ♏ vicem. No change in the symptoms took place, and he died on the following day.

Necroscopia.—Head: between the arachnoid and pia mater towards the occiput in both hemispheres an effusion of bloody serum. Substance of brain with red dots more than natural. Softening of the lower surface of the fornix, and an almost complete obliteration of the septum lucidum. About two ounces of transparent serum in the left ventricle, none in the right; the lining membrane of the left ventricle unusually distinct and easy to be separated.

No examination of the abdomen would be permitted.

The preparatory stage, which was well marked in

the above case, is at an earlier period of life denoted by frowning without any extrinsic cause, by starting from sleep, or by frequent application of the hand to the head, with general dulness, or peevishness. In younger subjects also strabismus occurs at an earlier period [1].

Although the evidence before me points out strabismus as a symptom of disease of the central part of the brain, yet I have seen recoveries after it has occurred, and very lately I observed it in a gentleman about twenty years of age, while in a state of coma, in a fever, of which he recovered. In this case however the symptoms bore a resemblance to those of hydrocephalus, and during several weeks before the febrile attack, he was observed to keep to the fire, and to be unusually silent and fond of solitude.

In another case which occurred lately of what was considered hydrocephalus in a child, but which wanted this distinctive mark, viz. strabismus, on examination after death, much fluid, but no softening of any part of the brain was found.

That form of Chronic Hydrocephalus which is

[1] To avoid misconception, let it be remembered that there is strabismus, 1st, in early infancy, before the eyes have been accustomed by habit to move in the same axis; 2nd, in some, when not looking with sufficient attention, or in laughing, &c.; 3rd, in irregular gout from affection of the muscles of the eye; 4th, in some, in a permanent form, from habit: all of those are to be distinguished from the above.

attended with enlargement of the head, and opening of the sutures, is to be considered as chronic arachnitis, in which the stage of coma is postponed by the increased room afforded for the effused fluid. Those cases have become much more rare than formerly, in consequence of the attention to the state of the bowels, and other improvements in the management of children which have become general of late years.

For the treatment of the preparatory stage of hydrocephalus, I am enabled to recommend repeated mercurial purgatives, blisters behind the ears, and if there be heat of the head, leeches. By these, and similar means, the progress of the disease is easily arrested, while on the contrary, if suffered to proceed to the latter stages, it is all but hopeless.

In the latter stages, leeches, counter-irritants, and mercurials, are our most valuable means. In some cases I used the cyanuret of mercury, which although apt to nauseate, yet has the effect of producing salivation with rapidity, and is destitute of either acrid or narcotic qualities. Sinapisms made of strong mustard and water, without any addition, and applied to the back of the head, or in bags enveloping the feet and ankles, are far superior to blisters in rousing from coma. With regard to opiates an unfounded prejudice exists; they are

imperatively required, whenever, notwithstanding the use of the remedies now mentioned, wakefulness continues constant. In case of sleep disturbed by moans and starts, the patient should be awakened, as that state produces more fatigue than rest, and small doses of Dover's powder will then be sometimes found to change this restless sleep into refreshing slumbers, with improvement of all the symptoms.

INDEX.

Acetate of lead in Bronchitis, 53.
Amenorrhœa, 82.
Anidrosis, 62.
Aortic Valves, diseased symptoms of, 75.
—— causes, 79.
Arteries large, bounding of, 76.
Ascites, 96.
—— with renal dropsy, 57.
—— treatment of, 102.

Barlow, Dr., 24.
Baths, 42. 44.
Blackhall, Dr., 3.
Bleeding in renal dropsy, 46, 47.
—— valvular disease of heart. 84.
Bright, Dr., 3.
—— negative as well as positive evidence in favour of his proposition, 14.
Bronchitis connected with renal dropsy, 35.
—— treatment of, 52.

Calomel, 49. 60.
Cases of dropsy from diseased kidney, 63.
—— valvular disease of the heart, 86.
—— pneumonia, 93.
—— emphysema, 94.
—— Ascites fatal, 99.
—— cured, 107.
—— Hydrothorax, 116.
—— Hydrops pericardii, 120.
Christison, Dr., 3.
Chronic diseases occur epidemically, 23.
Cinchona in valvular disease, 83.
Cold, effects of, 30, 31.
Copaiba, 46.
Crampton, Dr., 3.
Cycles of Cœlius Aurelianus, 00.

Darwell, Dr., 5. 10.
Death, how most frequently occurring in renal dropsy, 36.
—— in valvular disease, 85.
Decubitus in hydrothorax, 119.
—— diseased mitral valve, 74.
Diaphoretics, 42.
Digitalis, 81.
Diseases complicated with renal dropsy, 52.
Diuretics, 33. 40, 41.
Dropsy rather a symptom than a disease, 1.
—— inflammatory, 3.
—— renal causes of, 31. 41.
—— from diseased mitral valves, 73.
—— —— diseased aortic valves, 75.
—— —— disease of lungs, 91.
—— —— debility, 95.
—— —— topical affections, 96.

Embrocations, various, 57.
Emphysema of the lung, 53.
Enemata of nitrate of silver, 55.

Frank, J. P., 40.

Gastro-enteritis combined with renal dropsy, 35.
—— treatment of, 54.
Gregory, Dr., 3. 41.

Headach in renal dropsy, 60.
Heart, valvular disease of, with renal dropsy, 34.
—— treatment of, 55.
Hydrocephalus, 124.

Hydrothorax, 116.
Hydrops, pericardii, 120.

Influenza, 34.
Iodine, 48. 50.
Issues, effect of, in valvular diseases, 56. 81.

Kidney, disease of, symptoms obscure, 6.
——— cancerous structure, 15.
——— atrophy, 16.
——— extirpated, *ib.*
——— appearance of, when urine coagulates by heat, *ib.*

Leeches applied to larynx, 53.
——————— rectum, 104.

Mercury, 49.
Mitral valves, diseased, symptoms of, 73.
Mortality, comparative, of renal dropsy, under different modes of treatment, 42.
Mucus cloud of urine altered in renal dropsy, 36.
Mustard applications, 45.

Naphtha, 45.
Nephritis, 16.

Pain of shoulder, 114.
Pericarditis, 34, 35.
Perspiration nearly extinct in renal dropsy, 27.
——————— proportion of, to urine, in health, *ib.*
Poultice of snails and liverwort, 105
Pulse and circulation in renal dropsy, 27.
——— intermittent, 74.
Purgatives, 42. 49.
————— table of effects of, 106.

Recovery of renal dropsy, to secure, 51.

Scrofula, 34.
Sounds of the heart, 74.
Sounds of bells in the ears, 59.
Spirits, ardent, a cause of renal dropsy, 33.
Stimulants, use of, in valvular disease, 86.
Stupor, 60.

Treacle, 43.

Urine, coagulating cases of, by Drs. Christison and Gregory, 4.
—— in fever, 7.
—— difference of coagulability, by heat and corrosive sublimate, 8
—— in children, 9.
—— rendered coagulable by articles of diet, *ib.*
—— specific gravity, 17.
—— urea diminished, *ib.*
—— mode of examining, 18.
—— nature of sediments determined by heat, 19, 20.
—— quantity, 20. 26.
—— coagulable denotes organic disease of the kidney, 21, 22.

Valvular, disease of heart, treatment of, 80.

THE END.

Gilbert & Rivington, Printers, St. John's Square, London.


D52